IBM® Water Operations for Waternamics - Guida per l'utente

Nota: prima di utilizzare queste informazioni e il prodotto da esse supportate , leggere le informazioni contenute nella sezione Informazioni particolari alla fine del documento.

Questa edizione si applica alla versione 5, release 1, modifica 0 di IBM® Water Operations for Waternamics ed a tutte le release e modifiche successive, se non diversamente indicato nelle nuove edizioni.

Per le versioni, release e modifiche fornite da IBM Corporation: Limitazione previste per gli utenti del Governo degli Stati Uniti - L'uso, la duplicazione o la divulgazione sono limitati dal GSA ADP Schedule Contract con IBM Corporation.

Sommario

1. Introduzione

La presente guida introduce le funzioni di IBM® Water Operations for Waternamics e descrive alcuni dei casi di utilizzo implementati dalla soluzione.

Per ulteriori informazioni relative all'utilizzo della soluzione, consultare la [documentazione del prodotto IBM® Intelligent Operations Center](#).

2. Panoramica sulla soluzione

IBM® Water Operations for Waternamics è una soluzione creata sulla base del software IBM® Intelligent Operations Center e ne potenzia le funzioni.

IBM® Water Operations for Waternamics è progettato come una soluzione basata su situazioni che rende più semplice l'effettivo controllo operativo della rete idrica di una città o di un distretto idrico.

La soluzione fornisce i seguenti vantaggi:

- Raccoglie e mette in correlazione i dati provenienti dai sensori e dai sistemi enterprise. Tali dati comprendono dati relativi agli asset, letture delle misurazioni ed eventi.
- I dati vengono presentati in un contesto geospaziale a profili utenti differente, fornendo agli utente le informazioni necessarie per prendere le decisioni appropriate, quotidianamente ed in situazioni di crisi. Prima della presentazione, i dati possono essere analizzati e trattati in modo preliminare dalla soluzione. I dati vengono presentati attraverso due viste: la vista Operazioni e la vista Stato.
- Rende più semplice il ritorno al normale funzionamento mediante l'attivazione manuale o automatica delle SOP (standard operating procedure).

L'obiettivo della soluzione non è quello di sostituire ciascuno dei sistemi funzionali, storici, specializzati e collaudati dell'utente, ad esempio sistemi GIS (geographic information system), EAM (enterprise asset management) e SCADA (supervisory control and data acquisition), quanto piuttosto raccogliere e mettere in correlazione i dati rilevanti necessari per un controllo operativo ottimale.

2.1. Vista Operazioni

Nella vista Operazioni, è possibile visualizzare i dati in una mappa geospaziale, in una mappa logica oppure in un elenco. I dati comprendono:

- Asset, con o senza letture del sensore associate
- Eventi, che comprendono ordini di lavoro e avvisi dai sensori e dai sistemi enterprise
- Come opzione, dati provenienti da origini esterne, come feed meteo o repository Open Data.

Selezionare **Vista personale > Elenco** per visualizzare, monitorare e gestire gli elementi dati in un elenco.

Selezionare **Vista personale > Mappa logica** per monitorare il modello semantico in una mappa e per mostrare le relazioni tra un asset selezionato ed altri elementi nel modello di dati semantico. Il modello è un'astrazione del mondo reale dell'infrastruttura, degli asset e delle misurazioni. Per ulteriori informazioni relative al modello

semantico, consultare la [documentazione del prodotto IBM® Intelligent Operations Center: Popolamento dell'infrastruttura](#).

Utilizzare la finestra Filtro per definire i dati visualizzati. I diversi filtri sono raggruppati in riquadri filtro.

Per ulteriori informazioni relative alla vista Operazioni, consultare [Visualizzazione, filtro ed analisi dei dati Device Management Enablement nella documentazione del prodotto IBM® Intelligent Operations Center](#).

3. Ruoli utente e accesso
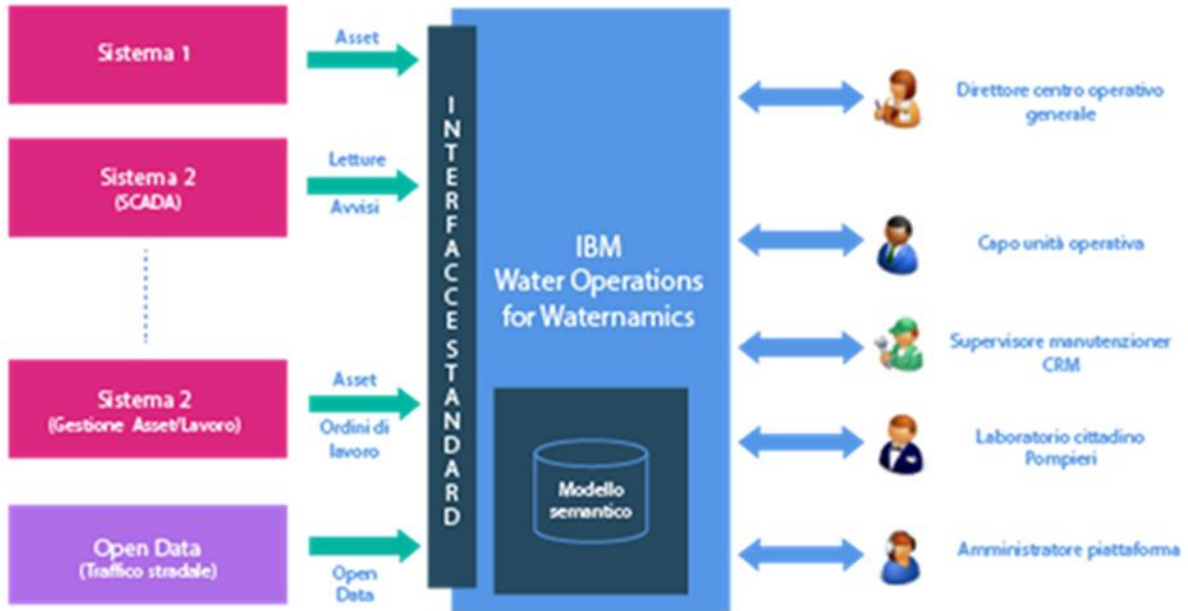
Figura 1: Contesto utente di IBM® Water Operations for Waternamics

IBM® Water Operations for Waternamics aggrega i dati provenienti dai diversi sistemi all'interno di un'organizzazione responsabili del funzionamento della rete idrica e dati provenienti da sistemi esterni. Tali sistemi possono variare da un'implementazione all'altra. Tuttavia, la soluzione utilizza interfacce predefinite e la distribuzione è più semplice in caso di conformità a tali interfacce.

Una volta elaborati, i dati vengono presentati ai diversi utenti in base al relativo profilo. Insieme alla soluzione, vengono installati i seguenti ruoli predefiniti. In base alle necessità della città in cui è distribuita la soluzione, possono essere attivati tutti o alcuni dei ruoli:

Etichetta	Vista Operazioni dedicata	Pagina Indicatore prestazioni
Amministratore	X	X
Gestore	X	X
Supervisore	X	X
Autorità locale	X	
Centro assistenza clienti	X	
Agente fornitura dell'acqua	X	X
Agente acque reflue	X	X
Agente manutenzione	X	X

Etichetta	Vista Operazioni dedicata	Pagina Indicatore prestazioni
Vigile del fuoco	X	
Personale operativo	X	X

Per ciascun profilo, viene creato un gruppo di utenti. Per ciascun gruppo viene creata una vista o pagina "Operazioni", in modo che ciascun gruppo disponga di accesso a tutti i dati necessari per il proprio ruolo.

4. Filtro dei dati nelle mappe ed elenchi

È possibile decidere i dati che si desidera visualizzare nelle mappe o nell'elenco selezionando uno o più filtri dalla finestra Filtro. I filtri disponibili sono determinati in base al proprio profilo utente. Ad esempio, è possibile decidere di filtrare i dati in base allo stato ed all'ubicazione geospaziale.

Per ulteriori informazioni, consultare la [documentazione del prodotto IBM® Intelligent Operations Center: Filtro degli asset nelle mappe e nell'elenco](#).

4.1. Filtro dei dati solo per le reti di acqua potabile

Se la propria distribuzione è relativa solo alla rete di acqua potabile, è possibile utilizzare i filtri che fanno riferimento alla rete di acqua potabile forniti con la soluzione. Tali filtri sono raggruppati in riquadri filtro nella finestra Filtro. I gruppi di filtri comprendono:

- Acqua: Accessori di rete
- Acqua: Zone
- Acqua: Sensori
- Eventi
- Acqua: Clienti
- Acqua: Qualità
- Acqua: Interventi
- Acqua: Avvisi

Se necessario, dopo l'installazione della soluzione, è possibile riorganizzare tali filtri.

4.2. Filtro dei dati per le reti di acqua potabile e le reti di acque reflue

Se la propria soluzione IBM® Water Operations for Waternamics è relativa solo alle reti di acqua potabile e di acque reflue, è possibile utilizzare i gruppi di filtri forniti con la soluzione per tali reti. I gruppi di filtri comprendono:

- Acqua: Accessori di rete
- Acqua: Zone
- Acqua: Sensori
- Eventi
- Acqua: Qualità
- Acqua: Interventi

- Acqua: Avvisi
- Acque reflue: Reti fognarie
- Acque reflue: Elementi di rete
- Acque reflue: Zone
- Acque reflue: Sensori
- Acque reflue: Interventi
- Rete area superficie: Reti fognarie
- Rete area superficie: Eventi
- Rete area superficie: Siti
- Rete area superficie: Sensori

Se necessario, dopo l'installazione della soluzione, è possibile riorganizzare tali filtri.

5. Casi di utilizzo per IBM® Water Operations for Waternamics

5.1. Visualizzazione della rete e delle zone

5.1.1. Rete idrica

5.1.1.1. Sezioni della tubatura

Potrebbe essere richiesto che gli asset siano facilmente identificabili mediante i relativi attributi sulla mappa. Ad esempio, potrebbe essere richiesto che le tubature di un certo diametro siano visualizzate con uno specifico spessore linea o che il colore della tubatura ne indichi lo stato. Nella soluzione sono disponibili due configurazioni:

- Le tubature vengono visualizzate con un singolo colore ed uno spessore costante. Il colore è quello del gruppo di filtri selezionato.

  Oppure
- Lo spessore della linea che rappresenta la tubatura varia in proporzione al diametro della sezione della tubatura ed il colore della linea varia in base al tipo di rete ed allo stato della sezione della tubatura.

Se viene utilizzata la seconda soluzione, nel livello principale vengono visualizzate le sezioni della tubatura con i relativi diametri e tipi di rete e, nel livello secondario, il colore indica lo stato della sezione della tubatura. Tale stato viene determinato dalle letture delle misurazioni e dalla relativa corrispondenza con il valore dell'attributo dello stesso nome nel GIS. Ciò significa che se il GIS mostra uno stato diverso da quello registrato dalle letture, il colore della tubatura indica un'anomalia. In caso contrario, il colore indica uno stato normale.

Se non è disponibile alcuna lettura, lo stato viene determinato in base al valore corrente dichiarato a livello dell'asset, come illustrato nella tabella riportata di seguito:

	Attributo ENABLED ("Pieno")	Nessuna lettura	Stato
Sezioni (classe: Esri.wMain)	valore = 1, Abilitato	Nessuno	valore = 0 (soglia normale) – Verde
	valore = 0, Disabilitato	Nessuno	valore = 2 (soglia critica) - Rosso

5.1.2. Suddivisione in zone ed efficienza

È possibile visualizzare le zone di livello piezometrico.

5.1.2.1. Livelli piezometrici

IBM® Water Operations for Waternamics visualizza le zone del livello piezometrico. I dati relativi alla zona devono essere forniti mediante l'interfaccia degli asset. Sono visualizzati gli asset che appartengono allo stesso livello piezometrico e gli asset che sono logicamente associati al livello, ad esempio sensori e strumentazione. Una proprietà dell'asset indica la zona a cui appartiene l'asset.

Selezionare un livello piezometrico per visualizzarne le caratteristiche. I livelli associati a ciascun livello piezometrico hanno un colore di riempimento.

Per la visualizzazione dei livelli piezometrici, sono possibili due soluzioni:

- Entrambe le zone sono visualizzate con un colore di riempimento uniforme e vengono distinte in base alla rappresentazione dei relativi margini.

Oppure

- La zona è visualizzata in un colore separato specificato nell'interfaccia in modo da riflettere il livello piezometrico della zona. Tali informazioni vengono restituite mediante l'interfaccia degli asset. Il colore della linea indica lo stato della zona rispetto ai tipi di lettura associati ed alle soglie configurate.

I colori, i tipi di lettura e le soglie da associare a ciascun livello piezometrico vengono inviati alla soluzione in base all'interfaccia degli asset. I colori di "stato" sono i colori di stato standard di IBM® Water Operations for Waternamics. I cinque stati sono: non determinato, nessun valore, accettabile, di attenzione e critico.

5.1.3. Interfaccia degli asset

I dati dell'asset vengono aggiornati mediante l'interfaccia degli asset.

Descrizione

Identificativo interfaccia	I1
Nome interfaccia	IOW-IN-ASSETS-CORE
Formato dati di input	XML
Formato dati di output	Formato RDF/ IBM® Water Operations for Waternamics
Client interfaccia	IBM® Water Operations for Waternamics

Esempio di partner per questa interfaccia (*)	Sono presenti connettori riutilizzabili per i sistemi ESRI e GAMA.
Topologia interfaccia	Modalità batch con una frequenza di due volte al giorno. I dati vengono caricati inizialmente durante l'installazione della piattaforma e successivamente mediante aggiunte ed aggiornamenti quotidiani. Importante: il caricamento iniziale può impiegare diversi minuti.

Nota: per tutte le interfacce, l'unico requisito per lo strumento che fornisce i dati di origine è che lo strumento supporti il formato dei dati.

Formato dei dati

I dati gestiti da questa interfaccia sono in formato XML. Il formato è descritto nel file XSD **VDS_IOW-IN-ASSETS-CORE.xsd**.

5.2. Visualizzazione della strumentazione e dei sensori

5.2.1. Funzionamento generale

Selezionare i filtri pertinenti per la visualizzazione degli asset sulla mappa. Gli asset vengono visualizzati indipendentemente dal fatto che dispongano di letture di misurazione associate.

È possibile configurare i tipi di asset in modo che gli asset siano visualizzati nel modo riportato di seguito:

- Lo stato è visualizzato in linea con il valore delle letture inviate da un sistema esterno o calcolate dalla soluzione.
- È possibile filtrare la visualizzazione in base a tale stato o alla selezione di un'area geografica di IBM® Water Operations for Waternamics.
- L'icona dell'asset è determinata dalla configurazione del tipo di asset.

Tali tipi di asset sono visualizzati sulla mappa nel modo riportato di seguito:

- Viene visualizzata un'icona univoca per elemento dati.
- Se più elementi dati si trovano a meno di una specifica distanza l'uno dall'altro, viene utilizzata un'icona cluster per rappresentare il gruppo di elementi dati vicini sulla mappa.
- L'icona dell'asset ha un colore di sfondo basato sul riquadro filtro associato al livello che comprende l'asset.
- L'icona dell'asset dispone di un riquadro di stato colorato in base alle soglie precedentemente configurate ed alla lettura associata. Tale riquadro è disabilitato quando le letture non sono disponibili.

È anche possibile configurare il rendering lato server per i livelli di asset in cui possono essere visualizzati più di 3.000-5.000 asset contemporaneamente su una mappa. Per ulteriori informazioni sul rendering lato server, consultare la

documentazione del prodotto IBM® Intelligent Operations Center: Ottimizzazione del rendering della mappa. Attualmente, viene eseguito il rendering lato server solo della rete.

5.2.2. Asset e stato dell'asset

5.2.2.1. Stato della valvola sugli alimentatori

Il requisito è quello di visualizzare la posizione delle valvole e le relative proprietà, dove ciascuna valvola visualizzata ha uno stato diverso da quello previsto. Ad esempio, dove una valvola che dovrebbe essere chiusa è aperta o viceversa.

Lo stato previsto è fornito dai sistemi degli operatori. Tale stato viene inviato a IBM® Water Operations for Waternamics attraverso l'interfaccia degli asset.

Lo stato effettivo viene inviato come misura attraverso l'interfaccia delle letture.

- È possibile filtrare il tipo di strumentazione definita per le valvole nel modello semantico. Il livello risultante visualizza i dati della valvola in base alla regola descritta nella seguente tabella. Il colore non indica i casi normali/anormali, ma invece, specifica se la valvola è aperta (colore verde) o chiusa (colore rosso). Il colore arancione indica una valvola che è "temporaneamente" chiusa:

	Attributo CURROPEN ("Attualmente aperto")	Lettura CURROPEN ("Attualmente aperto")	Stato
Valvola (class: Esri.wSystemValve)	valore = 1, "Valvola aperta"	valore = 1, "Valvola aperta"	valore = 0 (soglia accettabile) - Verde
	valore = 1, "Valvola aperta"	valore = 0, "Valvola chiusa"	valore = 1 (soglia di attenzione) - Arancione
	valore = 0, "Valvola chiusa"	valore = 0, "Valvola chiusa"	valore = 2 (soglia critica) - Rosso
	valore = 0, "Valvola chiusa"	valore = 1, "Valvola aperta"	valore = 0 (soglia accettabile) - Verde

	Attributo CURROPEN ("Attualmente aperto")	Nessuna lettura	Stato
Se non è disponibile alcuna lettura, lo stato viene determinato in base al valore corrente dichiarato a livello dell'asset: **Valvola** (class: Esri.wSystemValve)	valore = 1, "Valvola aperta"	Nessuno	valore = 0 (soglia accettabile) – Verde
	valore = 0, "Valvola chiusa"	Nessuno	valore = 2 (soglia critica) - Rosso

Pertanto, è possibile filtrare i dati delle valvole in base allo stato delle valvole e visualizzare le valvole aperte, chiuse o temporaneamente chiuse.

Icona	►◄

5.2.2.2. Asset di rete

5.2.2.2.1. Idranti

È possibile visualizzare la posizione e le proprietà degli idranti. La visualizzazione varia in base ad una lettura che caratterizza lo stato dell'idrante anti-incendio. Come per la visualizzazione delle valvole, viene applicata un regola per visualizzare gli idranti in base alla corrispondenza attributo/lettura.

È possibile applicare un filtro in base al tipo di asset definito per gli idranti nel modello semantico. Il livello risultante visualizza i dati dell'idrante in base alla regola riportata nella seguente tabella.

Il colore non indica i casi normali/anomali ma specifica se l'idrante è pieno (verde) o a secco (rosso). Il colore arancione indica gli idranti "temporaneamente" a secco.

	Attributo ENABLED ("Pieno")	Lettura ENABLED ("Pieno")	Stato
Idranti (classe: Esri.wHydrant)	valore = 1, "Idrante pieno"	valore = 1, "Idrante pieno"	valore = 0 (soglia accettabile) – Verde
	valore = 1, "Idrante pieno"	valore = 0, "Idrante a secco"	valore = 1 (soglia di attenzione) – Arancione
	valore = 0, "Idrante a secco"	valore = 0, "Idrante a secco"	valore = 2 (soglia critica) - Rosso
	valore = 0, "Idrante a secco"	valore = 1, "Idrante pieno"	valore = 0 (soglia accettabile) - Verde

Se non è disponibile alcuna lettura, lo stato viene determinato in base al valore corrente dichiarato a livello dell'asset:

	Attributo ENABLED ("Pieno")	Nessuna lettura	Stato
Idranti (classe: Esri.wHydrant)	valore = 1, "Idrante pieno"	Nessuno	valore = 0 (soglia accettabile) – Verde
	valore = 0, "Idrante a secco"	Nessuno	valore = 2 (soglia critica) - Rosso

I dati dell'idrante vengono forniti attraverso l'interfaccia degli asset e le letture dell'idrante (inclusa l'apertura) vengono fornite attraverso l'interfaccia delle letture.

Icona per gli idranti	🚰
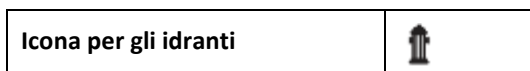
5.2.2.2.2. Erosioni

È possibile applicare il filtro in base al tipo di asset definito per un'erosione nel modello semantico. Il livello risultante visualizza la posizione e le proprietà delle erosioni. Possono anche essere visualizzati gli avvisi di flusso permanente per le erosioni.

Analisi delle differenze:

È disponibile un livello di avviso dedicato per visualizzare gli avvisi di flusso permanente

Sono disponibili due livelli separati, un livello "asset" ed un livello "avviso".

I dati relativi all'erosione sono forniti attraverso l'interfaccia degli asset e le letture attraverso l'interfaccia delle letture.

Gli avvisi di "Flusso permanente" a livello di erosione vengono restituiti in IBM® Water Operations for Waternamics attraverso l'interfaccia degli avvisi.

A livello di strumentazione, viene utilizzata una casella delle proprietà specifica per visualizzare l'elenco di avvisi associati all'erosione.

Icona per le erosioni	〓

5.2.2.2.3. Valvole di riduzione della pressione

È possibile visualizzare la posizione delle valvole di riduzione che non presentano una particolare regola simbolo, cioè le valvole di riduzione non dispongono di stati o Rosso/Ambra/Verde. È anche possibile visualizzare la pressione a monte e la pressione a valle dei sensori di pressione associati.

- Viene visualizzato un livello per gli asset della valvola di riduzione della pressione.
- Viene visualizzato un livello per gli asset del sensore di pressione.
- Le pressioni del sensore dalla valvola di riduzione sono visualizzate nella vista logica.

Icona per le valvole di riduzione della pressione	⊗
Icona per i sensori di pressione	⊘

5.2.2.2.4. Contatori di zona per le misurazioni del quartiere

La vista visualizza la posizione dei contatori di zona per le misurazioni del quartiere.

Icona per i contatori di zona per le misurazioni del quartiere	⚡

5.2.2.2.5. Interconnessioni

La vista visualizza la posizione delle interconnessioni. Viene visualizzato un livello per le interconnessioni.

Icona per le interconnessioni	✳

5.2.2.3.   Asset dell'impianto

La posizione e le proprietà delle stazioni di pompaggio, dei serbatoi e degli impianti sono visualizzate con una singola icona per tipo di edificio.

È definito un filtro per ciascun tipo di installazione o asset dell'impianto, ad esempio serbatoi/torri idriche, impianti di elevazione dell'acqua e stazioni di potenziamento.

Icona per i serbatoi	
Icona per gli impianti di elevazione dell'acqua	
Icona per i bacini idrografici	
Icona per le stazioni di avviso	
Icona per gli impianti di produzione	
Icona per gli impianti di potenziamento	

5.2.2.4.   Sensori di pressione

I sensori di pressione dell'impianto ed i relativi stati vengono considerati allo stesso modo dei sensori di pressione sulla rete.

Icona per i sensori di pressione	

5.2.2.5.   Sensori KAPTA ™

I sensori KAPTA ™ e i relativi stati vengono considerarti nello stesso modo dei sensori di pressione nella rete.

Icona per i sensori KAPTA ™	

5.2.2.6.   Punti di prelievo con monitoraggio automatico

La posizione e le proprietà dei punti di prelievo devono essere visualizzabili. È necessario essere in grado di visualizzare i punti di prelievo con monitoraggio automatico ed i punti di prelievo di regolamentazione.

Lo stato dei punti di prelievo è determinato in base al risultato dell'ultima analisi.

Vengono creati un livello per i punti di prelievo del programma di monitoraggio automatico ed un livello per i punti di monitoraggio di regolamentazione.

Icona per i punti di prelievo con monitoraggio automatico	
Icona per i punti di prelievo di regolamentazione	

5.2.2.7. Sensori di scarico dell'impianto

Tali sensori sono a singola lettura e comprendono sensori di temperatura, di torbidezza e per il cloro.

È possibile visualizzare la posizione e le proprietà di tali sensori

Il loro stato viene determinato confrontando la misurazione con una soglia definita per i relativi tipi.

Viene creato un livello per tutti i sensori di scarico dell'impianto.

Icona per i sensori di scarico dell'impianto	

5.2.3. Interfaccia degli asset

Gli asset dell'impianto e del sensore vengono aggiornati attraverso l'interfaccia degli asset.

Descrizione

Identificativo interfaccia	I1
Nome interfaccia	IOW-IN-ASSETS-CORE
Formato dati di input	XML
Formato dati di output	Formato RDF/ IBM® Water Operations for Waternamics
Client interfaccia	IBM® Water Operations for Waternamics
Topologia interfaccia	Modalità batch con una frequenza di due volte al giorno

Formato dei dati

I dati gestiti da questa interfaccia sono in formato XML. Il formato dei dati è descritto dal file XSD **VDS_IOW-IN-ASSETS-CORE.xsd.**

5.3. Visualizzazione delle proprietà dell'asset

5.3.1. Funzionamento generale

Fare clic su un asset per visualizzare una scheda di anteprima che contiene le proprietà dell'elemento. Tali proprietà vengono restituite in IBM® Water Operations for Waternamics mediante l'interfaccia degli asset.

5.3.2. Visualizzazione di informazioni supplementari su un server esterno

Alcune strumentazioni possono essere associate ad un collegamento ipertestuale, ad esempio, un collegamento ad un documento PDF archiviato nel data warehouse.

Se presente, l'attributo URL viene restituito attraverso l'interfaccia degli asset in formato di collegamento ipertestuale.

5.3.3. Visualizzazione degli avvisi e degli ordini di lavoro associati ad un asset

Per visualizzare gli avvisi e gli ordini associati all'asset selezionato, fare clic su **Ulteriori informazioni** nella scheda di anteprima.

5.3.4. Interfaccia degli asset

Le proprietà dell'asset sono sincronizzate mediante l'interfaccia degli asset.

Descrizione

Identificativo interfaccia	I1
Nome interfaccia	IOW-IN-ASSETS-CORE
Formato dati di input	XML
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Formato dei dati

I dati gestiti da questa interfaccia sono in formato XML. Il formato è descritto nel file XSD **VDS_IOW-IN-ASSETS-CORE.xsd.**

5.4. Ricerca di asset

5.4.1. Funzionamento generale

In IBM® Water Operations for Waternamics, è possibile ricercare un asset in tre modi:

- Ricerca dell'asset in base al relativo identificativo sulla mappa
- Ricerca dell'asset in base al relativo identificativo nella mappa logica
- Ricerca dell'asset in base al relativo indirizzo

5.4.2. Ricerca degli asset sulla mappa

Per ricercare un asset utilizzando l'identificativo dell'asset, fare clic su **Ricerca di un asset** nella finestra Filtro, immettere l'identificativo e fare clic su **Cerca**. Sulla mappa viene visualizzata la scheda di anteprima dell'asset.

5.4.3. Ricerca in base all'identificativo sulla mappa logica

È anche possibile ricercare un asset in base al relativo identificativo IBM® Water Operations for Waternamics sulla mappa logica. Una volta selezionato un asset, un menu contestuale ne consente la visualizzazione sulla vista Mappa.

5.4.4. Ricerca in base all'indirizzo sulla mappa

Per eseguire una ricerca in base all'indirizzo, fare clic su **Ricerca per indirizzo** nella finestra Filtro ed immettere una posizione. Se la ricerca ha esito positivo, la mappa viene riposizionata in base all'indirizzo.

5.5. Visualizzazione delle letture e dello stato degli asset

5.5.1. Funzionamento generale

A ciascun asset è possibile associare una o più letture. Per ciascuna lettura, il raffronto tra la lettura ed i valori delle soglie definite, viene riportato seguendo un codice di colori a livello della lettura. Vi sono tre soglie standard con colori predefiniti. Le soglie vengono definite in base all'asset o al tipo di asset, e vengono applicate automaticamente su ogni asset.

Una delle letture viene dichiarata lettura principale e determina il colore dell'icona dello stato sulla mappa. Questa lettura principale viene definita in base al tipo di asset.

In IBM® Water Operations for Waternamics, possono essere definite solo tre soglie:

- Accettabile: visualizzato in verde
- Attenzione: visualizzato in arancione
- Critico: visualizzato in rosso

Quando la lettura è contenuta nella soglia, e non può quindi essere utilizzata per determinare il livello, lo stato è considerato incerto e non è selezionabile.

Esempio:

Definire le tre soglie con i seguenti limiti:

- Accettabile: Maggiore o uguale a 0 ed inferiore a -5
- Attenzione: Maggiore o uguale a 0 ed inferiore a 100
- Critico: Maggiore o uguale a 100 ed inferiore a 200

Ne risulta che il limite inferiore viene escluso e quello superiore viene incluso. Ad esempio:

- se Valore = -50, il livello = **Non determinato** (non selezionabile), perché non è contenuto nei limiti
- se Valore = 0, il livello = **Accettabile** (verde)
- se Valore = 100, il livello = **Attenzione** (arancione)
- se Valore = 200, il livello = **Critico** (rosso),
- se Valore = 250, il livello = **Non determinato** (grigio), poiché non compreso nei limiti

I tipi di lettura e le soglie di ciascun asset vengono definiti mediante l'interfaccia degli asset. Le letture importate in IBM® Water Operations for Waternamics attraverso l'interfaccia delle letture.

5.5.2. Stato asset

Lo stato di un asset viene determinato dalla sua lettura peggiore. Ad esempio, se sono previsti tre tipi di lettura, e una di esse è critica e le altre due sono normali, lo stato dell'asset viene indicato come critico, e quindi il problema viene affrontato, per assicurare una conformità generale.

5.5.2.1. Sensori di pressione e valvole di riduzione della pressione

Un sensore di pressione è caratterizzato da sei proprietà. I valori di tali proprietà vengono importati in IBM® Water Operations for Waternamics attraverso l'interfaccia delle letture. Le proprietà sono le seguenti:

- Pressione
- Stato di manutenzione
- Stato di errore (se il sensore è difettoso o meno)
- errore a breve termine
- Errore a lungo termine
- Errore generale

I valori di errore indicano la presenza di problemi nel sensore. La lettura "Errore generale" è il valore massimo degli altri errori. Questo valore indica lo stato generale del sensore.

Se il sensore di pressione viene associato ad una valvola di riduzione della pressione, la lettura della pressione del sensore può essere considerata come una caratteristica del valvola di riduzione ed è necessario considerare l'errore generale del sensore per determinare lo stato della valvola di riduzione. Per trovare i valori associati, è possibile scorrere la vista logica dagli elementi principali a quelli secondari e verificare le relative letture e gli stati.

Alla valvola di riduzione della pressione viene associata anche una lettura di manutenzione.

5.5.2.2. SENSORI KAPTA™

Un sensore KAPTA ™ è caratterizzato da quattro misure: cloro, conduttività, pressione e temperatura.

Come per le letture della qualità dell'acqua, lo stato generale del sensore viene determinato dalla lettura peggiore, che viene calcolata sulla base delle soglie delle letture.

5.5.2.3.   Letture del flusso

I sensori di pressione e flusso sono associati alle unità di produzione. È possibile visualizzare i log e gli stati di queste letture dai sensori.

Conoscere lo stato e le letture dei sensori associati ad un'unità di produzione è di aiuto. Le informazioni possono essere ottenute accedendo ai sensori associati tramite la vista logica.

È possibile filtrare in base ad ogni tipo di sensore.

5.5.2.4.   Letture d'interconnessione

A ciascuna interconnessione viene associato un punto di misurazione, un gate, un sensore di pressione ed una valvola di regolazione della pressione.

È possibile filtrare in base al tipo di strumentazione ed all'interconnessione.

Nella vista logica è possibile acquisire le letture del flusso, lo stato del gate, le letture di pressione, e regolare lo stato della valvola derivante dall'apparecchiatura interconnessione.

5.5.2.5.   Suddivisione in zone ed efficienza

La lettura del flusso notturno e del volume è associata ai contatori di zona.

Per i contatori di zona sono definiti i filtri.

L'acquisizione delle informazioni attraverso le zone piezometriche a cui sono associati i contatori è di aiuto. È possibile trovare queste informazioni nella vista logica.

5.5.3. Interfaccia delle letture

Attraverso l'interfaccia delle letture si aggiornano le letture di analisi della strumentazione

Descrizione

Identificativo interfaccia	I2
Nome interfaccia	IOW-IN-READINGS-CORE
Formato dati di input	XML

Formato dati di output	Formato CSV / IBM® Water Operations for Waternamics
Client interfaccia	IBM® Water Operations for Waternamics
Topologia interfaccia	Modalità batch con frequenza da determinare

Formato dei dati

I dati gestiti da questa interfaccia sono in formato XML. Il formato è descritto nel file XSD **VDS_IOW-IN-READINGS-Core.xsd**.

5.6. Visualizzazione dei serbatoi e dei livelli

5.6.1. Funzionamento generale

Il funzionamento dei serbatoi è uguale a quello del monitoraggio dello stato e della strumentazione. Lo stato dipende dai livelli dei serbatoi che sono importati mediante l'interfaccia letture, lo stato peggiore viene utilizzato.

5.7. Gestione avvisi ed eventi

5.7.1. Funzionamento generale

Ad un livello specifico, gli eventi possono essere creati automaticamente dal sistema ed è inoltre possibile crearli manualmente. Gli avvisi vengono generati automaticamente tramite l'interfaccia avvisi.

5.7.1.1.   Icone

I tipi di evento o di avviso sono identificati all'interno di un determinato livello. A ciascun gruppo di filtri viene associata un'icona che identifica l'evento o l'avviso sulla mappa. Il colore di sfondo dell'icona corrisponde al colore del gruppo di filtri.

I tipi di evento o di avviso sono identificati da un'icona specifica. A ciascun gruppo di filtri è associato un colore di sfondo, e il colore "contorno" indica lo stato dell'evento:

- Chiuso: Verde

- Non chiuso (Sospetto, Trattabile, Da trattare: Rosso

Esempi:

Quando nella finestra Filtro si selezionano uno o più filtri, gli eventi ed i messaggi di avviso associati con la conseguente livello vengono visualizzati sulla mappa.

Per visualizzare gli attributi per un evento o per un avviso, fare clic sull'icona di avviso o di evento sulla mappa. È anche possibile aggiornare o annullare l'evento o l'avviso.

5.7.1.2. Stati

I quattro stati degli eventi e degli avvisi sono i seguenti:

- Sospetto
- Trattabile
- Da trattare
- Chiuso

Per confermare un evento o un avviso, fare clic su **Ulteriori azioni** sulla scheda di anteprima dell'avviso o dell'evento e fare clic su **Conferma evento/avviso**.

Il valore "sì" viene assegnato al campo **Confermato** dell'evento o dell'avviso, e nel campo **Data fine** viene riportata la data corrente.

Gli eventi o gli avvisi confermati non vengono rimossi e restano visibili a seconda del filtro applicato al campo "Confermato". Per impostazione predefinita, tutti gli eventi e gli avvisi sono visibili, siano essi confermati o meno.

Non è possibile aggiungere commenti durante un'operazione conferma di un avviso. Tuttavia, è possibile aggiungere commenti prima o dopo l'operazione conferma facendo clic su **Ulteriori azioni > Aggiorna**.

5.7.1.3. Filtri

È possibile filtrare gli eventi e gli avvisi per:

- Tipo (solo un tipo per livello)

- Stato

- Zona associati

- Conferma (confermato o meno)

- Persona che ha creato l'evento o l'avviso

- Data

Quando si applica un filtro data, vengono visualizzati solo gli eventi con una data di inizio compresa tra la data di inizio e la data di fine della ricerca.

5.7.2. Funzioni evento

5.7.2.1.   Tipi di eventi

Possono essere visualizzati i seguenti tipi di eventi:

- Perdita di emergenza

- Fuoco

- Furti d'acqua

- Evento climatico

- Altro

5.7.2.2.   Icone

Ciascun tipo di evento è identificato da un'icona specifica.

Evento	Icona
Assenza di conformità rilevante nella qualità dell'acqua	⊗
Perdita d'emergenza e visibile	
Fuoco	
Contaminazione fiume	
Inondazione considerevole	
Rilascio Dam	
Furti d'acqua	
Ondata di calore	
Ondata di freddo	
Tempesta rilevante	
Vincoli di sicurezza migliorati	

5.7.2.3. Creazione di eventi

Per creare un evento, selezionare innanzitutto uno o più filtri nella finestra Filtro per visualizzare il livello di dati richiesti. Fare clic su **Ulteriori azioni>Nuovo elemento**, e quindi trascinare e rilasciare il nuovo elemento sulla mappa per selezionare la posizione geografica.

I seguenti campi sono popolati automaticamente:

- **Creato da** viene completato con l'accesso utente pertinente.

- La **Zona piezometrica** è già completata con la zona in cui l'evento ha luogo (in base a una query geospaziale)

- Coordinate, in base alla posizione selezionata mediante trascinamento e rilascio

- L'**Indirizzo** dell'evento viene aggiornato con il servizio di geolocalizzazione ESRI che viene richiamata in base a tali coordinate. È possibile regolare manualmente l'indirizzo e le coordinate vengono quindi aggiornate utilizzando il servizio geolocalizzazione stesso

5.7.3. Funzioni di avviso

5.7.3.1. Tipi di avvisi da visualizzare

I tipi di avvisi comprendono:

- Riflusso

- Perdite permanenti

- Intrusione

- Avvisi contatori mobili

- Perdite

- Perdite di correlazione Gutermann

5.7.3.2. Icone

Ogni tipo di avviso è identificato da un'icona specifica.

Avviso	Icona
Reflusso	
Flusso continuo	

Intrusione

Contatori mobili

Perdita di correlazione Gutermann

Valvole di riduzione della pressione difettose

5.7.3.3.   Creazione di avvisi

Gli avvisi vengono generati solo tramite l'interfaccia avvisi.

5.7.3.4.   Notifica degli avvisi e zoom

Le notifiche vengono inviate in base alle seguenti regole:

- Se l'avviso è urgente (S nel campo Urgenza dell'interfaccia degli avvisi) e lo stato è "Non chiuso" una notifica di criticità attiva la visualizzazione di un messaggio nel banner e un allarme sonoro.
- Se l'avviso non è urgente e lo stato è "Non-chiuso", viene inviata una notifica "Da monitorare".
- Altrimenti, viene inviata una normale notifica.

Aprire la notifica per visualizzare l'avviso sulla mappa.

5.7.3.5.   Attivazione di una SOP (standard operating procedure)

Quando IBM® Water Operations for Waternamics attiva un avviso, può essere attivata automaticamente una SOP (Standard Operating Procedure). Fare riferimento alla sezione SOP (Standard Operating Procedure) per una descrizione delle procedure che vengono attuate.

5.7.4. Interfaccia avvisi

Gli avvisi in IBM® Water Operations for Waternamics sono aggiornati tramite l'interfaccia avvisi.

Descrizione

Identificativo interfaccia	I3
Nome interfaccia	IOW-IN-ALERTS-CORE
Formato dati di input	XML
Formato dati di output	Formato CAP/CSV/ IBM® Water Operations for Waternamics

Client interfaccia	IBM® Water Operations for Waternamics
Topologia interfaccia	Modalità batch con frequenza da determinare

Formato dei dati

I dati gestiti da questa interfaccia sono in formato XML. Il formato è descritto nel file XSD **VDS_IOW-IN-ALERTS-CORE_1.7.xsd**

5.8. Visualizzazione degli ordini di lavoro e del relativo stato

5.8.1. Funzionamento generale

La rappresentazione visiva di un ordine di lavoro è simile a quella degli eventi o degli avvisi.

È possibile applicare un filtro in base al tipo di ordine di lavoro e alle proprietà dell'ordine di lavoro. Quando viene applicato un filtro data, vengono visualizzati solo gli ordini di lavoro che hanno una data di inizio compresa tra la data di inizio e la data di fine della ricerca.

Tipi di ordini di lavoro:

- ordini di lavoro dei clienti
- Ordini di lavoro di rete
- Ordini di lavoro dell'impianto
- Lavori stradali
- Chiusura erogazione acqua

5.8.2. Funzioni dell'ordine di lavoro

5.8.2.1. Icone

Ciascun tipo di ordine di lavoro è identificato da un'icona specifica.

Ordine di lavoro	Icona
ordini di lavoro dei clienti	
Ordini di lavoro dell'impianto	
Ordini di lavoro di rete	

| Lavori stradali | |
| Chiusura erogazione acqua | |

Il contorno dell'icona dipende dallo stato dell'ordine di lavoro:

- Ordine di lavoro completato: VERDE

- Ordine lavoro pianificato in un periodo trascorso o nel futuro che non contiene la data corrente: ARANCIONE

- Ordini di lavoro in corso (previsti in un periodo che contiene la data corrente): ROSSO

Il colore di sfondo dell'icona viene associato al gruppo filtri a cui l'ordine di lavoro è associato.

5.8.2.2.   Visualizzazione della posizione dei veicoli di risposta

L'origine dati di traccia della flotta può caricare la posizione dei veicoli di risposta e le relative proprietà in IBM® Water Operations for Waternamics. Le proprietà includono unità e tipo associati. È possibile visualizzare l'ultima posizione nota dei veicoli sulla mappa, con un'icona specifica per ciascun tipo di veicolo.

Le query di aggiornamento vengono attivate periodicamente quando si visualizza il livello. Fare clic sull'icona per visualizzare i valori inviati dall'origine dati di traccia della flotta:

- Identificativo veicolo
- Nome dell'agent associato al veicolo.
- Numero di registrazione del veicolo
- Unità o gruppo associati
- Stato del veicolo
- Numero di cellulare del conducente
- Data e ora dell'ultimo aggiornamento sul sito di traccia della flotta
- Stato del veicolo
- Velocità del veicolo
- Stato GPS

Questi dati non vengono memorizzati in IBM® Water Operations for Waternamics. Si tratta solo di una sovrapposizione geografica.

Il colore del contorno dell'icona è determinato dallo stato del veicolo:

- Veicolo in movimento (verde)
- Motore acceso ma veicolo fermo (ambra)
- Motore spento (rosso)
- Indeterminato, stato sconosciuto (grigio)

Icona veicolo	

5.8.2.3. Visualizzazione delle condizioni del traffico

L'origine dati del traffico carica le condizioni di traffico delle aree urbane sulla piattaforma.

5.8.3. Creazione di un ordine di lavoro

5.8.3.1. Creazione di un ordine di lavoro indipendente

Per creare un ordine di lavoro, selezionare il filtro richiesto per visualizzare il livello dati, e quindi fare clic su **Ulteriori azioni>Nuovo elemento**. Selezionare il nuovo elemento che si desidera aggiungere e trascinarlo sulla mappa Immettere i valori nella finestra Aggiungi nuovo elemento e fare clic su **Salva**. L'ordine di lavoro viene immediatamente visualizzato sulla mappa con uno stato Pianificato.

Quando il sistema esterno riceve la richiesta, l'utente riceverà una notifica. La notifica viene ricevuta quando il sistema esterno ha elaborato la richiesta. Lo stato della richiesta è quindi Pianificata o Completata.

È possibile visualizzare l'avanzamento dello stato dell'ordine di lavoro direttamente visualizzando le proprietà dell'ordine di lavoro.

5.9. SOP (Standard Operating Procedures)

5.9.1. Panoramica

La soluzione comprende un sistema manuale o automatico che attiva le SOP. Queste procedure possono includere una o più attività, alcune dei quali possono essere destinate ad utenti specificati o ad utenti di un gruppo utenti; altri avviano un processo o un flusso di lavoro completamente automatizzato. Per ulteriori informazioni relative a SOP, consultare [Configurazione SOP (Standard Operating Procedures)](#) nella documentazione del prodotto IBM® Intelligent Operations Center.

5.9.2. SOP fornite con la soluzione

Con la soluzione, l'amministratore può creare procedure specifiche, indipendentemente dal fatto che queste contengano solo le attività manuali o processi completamente automatizzati.

Ad esempio, la soluzione fornisce le seguenti procedure, che implementano un processo completamente automatizzato:

- **Gestione eventi**: quando viene creato un evento, viene avviata la procedura ed il relativo processo automatizzato. Ad esempio, il processo automatizzato verifica la zona dell'evento, e viene inviata un'e-mail ad uno o più destinatari, se necessario, prima di completare la procedura automaticamente.
- **Gestione avvisi**: quando nella piattaforma viene creato un avviso (dall'interfaccia), viene avviata la procedura ed il relativo processo. Ad esempio, il processo automatizzato genera un messaggio che consente la creazione di un intervento per l'interfaccia, quindi rimane in attesa della conferma o del

rifiuto della richiesta, successivamente, via e-mail ed attraverso una notifica dell'applicazione, invia una notifica ad un gruppo di utenti prima di completare la procedura.

- **Gestione del superamento dei valori di soglia:** Quando una lettura supera la soglia critica configurata nella piattaforma, è possibile prevedere l'invio da parte di una procedura e del relativo processo automatizzato, di una notifica via e-mail o applicazione.

Tali procedure ed i processi automatizzati associati richiedono una configurazione per attivare le procedure in base al tipo di evento, all'avviso ed alla soglia superata. È possibile configurare anche i destinatari delle e-mail e delle notifiche.

5.9.3. Configurazione delle procedure e dei processi automatizzati

La soluzione fornisce strumenti grafici, disponibili tramite un browser Web, per configurare le procedure, le attività manuali ed i processi automatizzati, sia quelle descritte in precedenza che quelle nuove.

Quando si progetta un processo automatizzato, il progettista può basare la logica del processo sul valore degli attributi principali dei dati da cui è derivata la procedura (ad esempio, evento, avviso, lettura e così via). È possibile selezionare le azioni che saranno eseguite dal processo dalla libreria delle azioni fornita con la soluzione:

- Invia una notifica
- invia un'e-mail
- Modifica lo stato d'intervento
- Chiudi l'attività automaticamente

Appendice A: file XSD per la versione 5.2.1

SCHEMA DEGLI AVVISI PER V5.2.1

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017, 2018.
 * © Copyright International Business Machines Corporation 2012, 2018.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */
```

```
 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
          xmlns:alert="http://vds.com/alertsType"
          xmlns:xsd="http://www.w3.org/2001/XMLSchema"
          elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="flowSource" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      <xsd:attribute name="requestType" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
      <xsd:documentation>Event data source record</xsd:documentation>
    </xsd:annotation>
    <xsd:all>
      <!--
        * Minimal properties
        */
      -->
      <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
      <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
      <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
      <xsd:element name="STARTTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
      <xsd:element name="LASTUPDATEDTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
      <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
      <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
      <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
      <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
        <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
        <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
        <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
        <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />
        <xsd:element name="ENDTS" type="alert:iibDateTime" minOccurs="0" maxOccurs="1" />
        <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ASSET_STRING_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
          <xsd:annotation>
            <xsd:documentation>threshold attribute domain is 0..1</xsd:documentation>
          </xsd:annotation>
          <xsd:complexType>
            <xsd:attribute name="value" type="xsd:string" />
            <xsd:attribute name="unit" type="xsd:string" />
            <xsd:attribute name="type" type="xsd:string" />
            <xsd:attribute name="threshold_value" type="xsd:string" />
            <xsd:attribute name="threshold" type="xsd:string" />
          </xsd:complexType>
        </xsd:element>
      </xsd:all>
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
```

```
Value= "\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})"
/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

SCHEMA DEGLI ASSET PER V5.2.1

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
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 * 5725-D69
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 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"

        xmlns:asset="http://vds.com/assetTypes"

        xmlns:xsd="http://www.w3.org/2001/XMLSchema"

        elementFormDefault="qualified">

  <xsd:complexType name="modelrefType">

    <xsd:annotation>

      <xsd:documentation>modelref will refer to the ID of the semantic

              model for a multi tenant environment.

              If the id attribute of modelref

              is empty all the request will

              executed played against the default model. </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />
```

```
    </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType describes relationships between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />

    <xsd:attribute name="no_reading_timeout" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />
```

```xml
    <xsd:attribute name="measureLabel" type="xsd:string" />

    <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypesType">

  <xsd:sequence>

    <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"

                              type="asset:measureTypeType" />

  </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="attributeType">

  <xsd:sequence>

    <xsd:element minOccurs="0" maxOccurs="1" name="value"

                      type="xsd:string" />

    <xsd:element minOccurs="0" maxOccurs="1" name="unit"

                              type="xsd:string" />

  </xsd:sequence>

  <xsd:attribute name="type" type="xsd:string" />

  <xsd:attribute name="name" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="assetType">

  <xsd:annotation>

    <xsd:documentation>

            AssetType is to describe the asset to create/update/delete.

    </xsd:documentation>

  </xsd:annotation>

  <xsd:sequence>

    <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

    <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />

    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />
```

```
        <xsd:element minOccurs="0" name="measureTypes" type="asset:measureTypesType" />

    </xsd:sequence>

    <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

    <xsd:attribute name="assetLabel" type="xsd:string" />

    <xsd:attribute name="assetDescription" type="xsd:string" />

    <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

    <xsd:annotation>

        <xsd:documentation>

                Request is the actual operation that will

                be executed. It captures the following informations :

                - request type :

                CREATE / UPDATE / DELETE

                - Assets data (attributes, relations etc...)

                the request type must be one of the following :

                 - INSERT : create an asset.

                 - DELETE : delete an asset.

                 - UPDATE : update an asset.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

    </xsd:sequence>

    <xsd:attribute name="type" type="xsd:string" />

</xsd:complexType>

<xsd:element name="operation">

    <xsd:annotation>
```

```xml
      <xsd:documentation>

        Operation is the root element of the xml file. It

         will contain all the requests.

          rootTenant : root tenant for the ingested data.

          timestamp : xml file generation date.

       </xsd:documentation>

    </xsd:annotation>

    <xsd:complexType>

      <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

      </xsd:sequence>

      <xsd:attribute name="rootTenant" type="xsd:string" />

     <xsd:attribute name="flowSource" type="xsd:string" />

      <xsd:attribute name="timestamp" type="xsd:string" />

      <xsd:attribute name="timeout" type="xsd:string" />

      <xsd:attribute name="timeoutTypeId" type="xsd:string" />

    </xsd:complexType>

  </xsd:element>

</xsd:schema>
```

SCHEMA DELLE LETTURE DELLE MISURAZIONI PER V5.2.1

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
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 *
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 * con IBM Corporation.

 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
        xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="description"   type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
```

```
                                                type="readings:relationsType" />
      <xsd:element minOccurs="0" maxOccurs="1" name="attributes"
                                                type="readings:attributesType" />
      <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                                type="readings:measureTypesType" />
   </xsd:sequence>
   <xsd:attribute name="location" type="xsd:string" />
   <xsd:attribute name="extType" type="xsd:string" />
   <xsd:attribute name="extId" type="xsd:string" />
   <xsd:attribute name="modelRef" type="xsd:string" />
   <xsd:attribute name="tenantId" type="xsd:string" />
   <xsd:attribute name="assetLabel" type="xsd:string" />
   <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
   <xsd:sequence>
      <xsd:element name="workEquipment" type="readings:workEquipmentType" />
      <xsd:element name="readingValues" type="readings:readingValuesType" />
   </xsd:sequence>
   <xsd:attribute name="extReadingSetid" type="xsd:string" />
   <xsd:attribute name="timestamp" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
   </xsd:sequence>
   <xsd:attribute name="type" type="xsd:string" />
   <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute"
                                          type="readings:attributeType" />
   </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="relationType">
```

```xml
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold"
                          type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="measureLabel" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                                  type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="flowSource" type="xsd:string" />
```

```
    <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
</xsd:schema>
```

SCHEMA DEGLI ORDINI DI SERVIZIO PER V5.2.1

```xml
<?xml version="1.0" encoding="UTF-8"?>


<!--
#
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#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                                type="xsd:integer" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                type="xsd:string" />
```

```
            <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                         type="so:iibDateTime" />
            <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
                         type="so:iibDateTime" />
            <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                         type="so:iibDateTime" />
            <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                         type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                         type="xsd:integer" />
            <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                         type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                         type=" xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TYPE"
                         type=" xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="CUSTOMER_ID"
                         type=" xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                         type="so:attributes" />
            <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
            <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
        </xsd:all>
</xsd:complexType>
<xsd:complexType name="attributes">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="assets">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="workorders">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
   <xsd:attribute name="type" type="xsd:string" />
   <xsd:attribute name="relationshipType" type="xsd:string" />
  <xsd:attribute name="usedForGeoLocation" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="workorder">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
```

```
    </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
    </xsd:restriction>
  </xsd:simpleType>
    <xsd:element name="operations">
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                        type="so:requestType">
          </xsd:element>
        </xsd:sequence>
        <xsd:attribute name="rootTenant" type="xsd:string" />
        <xsd:attribute name="flowSource" type="xsd:string" />
        <xsd:attribute name="timeout" type="xsd:string" />
        <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
</xsd:schema>
```

SCHEMA DEGLI ORDINI DI LAVORO PER V5.2.1

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
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#
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#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="TENANT_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                                    type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                     type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                              type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                              type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                              type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                              type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                              type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="TARGETSTARTDATE"
                                              type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                              type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                              type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                              type="wo:iibDateTime " />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                              type="wo:iibDateTime " />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                              type="xsd:string" />
```

```
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="MAINTENANCE_TYPE"
                                        type="xsd:string" />
```

```xml
<xsd:element minOccurs="0" maxOccurs="1" name="ASSET_LENGTH_WORKED_ON"
                                    type="xsd:decimal" />
<xsd:element minOccurs="0" maxOccurs="1" name="ASSET_STATE"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKER_COMMENT"
                                    type="xsd:string" />
<xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                    maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                    type="wo:attributes" />
<xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
    </xsd:all>
  </xsd:complexType>
</xsd:element>
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                              type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="flowSource" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                              minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
```

```
                             maxOccurs="1" minOccurs="1">
    <xsd:annotation>
      <xsd:documentation>
              For a SRCEVTCATEGORY = ALERT or EVENT, this is
              the IOW EVENTTYPE For a SRCEVTCATEGORY =
              WORKORDER, this is the IOW
              WORKORDER DOMAIN For
              a SRCEVTCATEGORY = NOREADING or
              READINGTHRESHOLD, this is the IOW
              MEASUREMENTTYPE
      </xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                             minOccurs="0">
   <xsd:annotation>
     <xsd:documentation>
                   For a SRCEVTCATEGORY = ALERT or EVENT, this is
                   the IOW EXTEVENTID For a SRCEVTCATEGORY =
                   WORKORDER, this is the
                   IOW WOEXTID For a
                   SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                   this is the IOW MEASUREMENT_ID (only for WO OUT)
       </xsd:documentation>
     </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">
</xsd:element>
<xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"
                             maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                             maxOccurs="1" minOccurs="0">
```

```
    </xsd:element>
     <xsd:element name="SOPREFERENCE" type="xsd:string"
                              maxOccurs="1" minOccurs="0"></xsd:element>
    </xsd:all>
  </xsd:complexType>
  <xsd:complexType name="srcEventListType">
    <xsd:sequence>
      <xsd:element name="SRCEVENT" type="wo:srcEventType"
                              maxOccurs="unbounded" minOccurs="0"></xsd:element>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attributes">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="assets">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
    <xsd:attribute name="usedForGeoLocation" type="xsd:string" />
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
</xsd:restriction>
  </xsd:simpleType></xsd:schema>
```

Appendice B: file XSD per la versione 5.2.0.6

SCHEMA DEGLI AVVISI PER V5.2.0.6

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017, 2018.
 * © Copyright International Business Machines Corporation 2012, 2018.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
          xmlns:alert="http://vds.com/alertsType"
          xmlns:xsd="http://www.w3.org/2001/XMLSchema"
          elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="flowSource" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      <xsd:attribute name="requestType" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
```

```xml
<xsd:annotation>
    <xsd:documentation>Event data source record</xsd:documentation>
</xsd:annotation>
<xsd:all>
    <!--
        * Minimal properties
        */
    -->
    <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="STARTTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
    <xsd:element name="LASTUPDATEDTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
    <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />

    <xsd:element name="ENDTS" type="alert:iibDateTime" minOccurs="0" maxOccurs="1" />
    <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
    <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
        <xsd:element name="ASSET_STRING_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />


    </xsd:all>
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
Value= "\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})"
/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

SCHEMA DEGLI ASSET PER V5.2.0.6

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017, 2018.
 * © Copyright International Business Machines Corporation 2015, 2018.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"
        xmlns:asset="http://vds.com/assetTypes"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="modelrefType">
    <xsd:annotation>
      <xsd:documentation>modelref will refer to the ID of the semantic
              model for a multi tenant environment.
              If the id attribute of modelref
              is empty all the request will
              executed played against the default model. </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
```

```
    <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />

  </xsd:sequence>

  <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

  <xsd:annotation>

    <xsd:documentation>

            RelationType describes relationships between assets.

    </xsd:documentation>

  </xsd:annotation>

  <xsd:attribute name="relationName" type="xsd:string" />

  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

   <xsd:sequence>

     <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

   </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

  <xsd:attribute name="range" type="xsd:string" />

  <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

 <xsd:complexType name="measureTypeType">

  <xsd:sequence>

     <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold" type="asset:thresholdType" />

  </xsd:sequence>

  <xsd:attribute name="unit" type="xsd:string" />

  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
```

```xml
        <xsd:attribute name="name" type="xsd:string" />

        <xsd:attribute name="measureLabel" type="xsd:string" />

        <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypesType">

    <xsd:sequence>

        <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"
                                        type="asset:measureTypeType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="attributeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="1" name="value"
                            type="xsd:string" />

        <xsd:element minOccurs="0" maxOccurs="1" name="unit"
                                type="xsd:string" />

    </xsd:sequence>

    <xsd:attribute name="type" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="assetType">

    <xsd:annotation>

        <xsd:documentation>

            AssetType is to describe the asset to create/update/delete.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

        <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

        <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />
```

```xml
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />

        <xsd:element minOccurs="0" name="measureTypes" type="asset:measureTypesType" />

    </xsd:sequence>

    <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

    <xsd:attribute name="assetLabel" type="xsd:string" />

    <xsd:attribute name="assetDescription" type="xsd:string" />

    <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

    <xsd:annotation>

        <xsd:documentation>

                Request is the actual operation that will

                be executed. It captures the following informations :

                - request type :

                CREATE / UPDATE / DELETE

                - Assets data (attributes, relations etc...)

                the request type must be one of the following :

                 - INSERT : create an asset.

                 - DELETE : delete an asset.

                 - UPDATE : update an asset.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

    </xsd:sequence>

    <xsd:attribute name="type" type="xsd:string" />

</xsd:complexType>

<xsd:element name="operation">
```

```
    <xsd:annotation>

      <xsd:documentation>

        Operation is the root element of the xml file. It

         will contain all the requests.

          rootTenant : root tenant for the ingested data.

          timestamp : xml file generation date.

       </xsd:documentation>

    </xsd:annotation>

    <xsd:complexType>

      <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

      </xsd:sequence>

      <xsd:attribute name="rootTenant" type="xsd:string" />

     <xsd:attribute name="flowSource" type="xsd:string" />

      <xsd:attribute name="timestamp" type="xsd:string" />

      <xsd:attribute name="timeout" type="xsd:string" />

      <xsd:attribute name="timeoutTypeId" type="xsd:string" />

    </xsd:complexType>

  </xsd:element>

</xsd:schema>
```

SCHEMA DELLE LETTURE DELLE MISURAZIONI PER V5.2.0.6

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017, 2018.
 * © Copyright International Business Machines Corporation 2012, 2018.

 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.

 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
        xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="description"    type="xsd:string" />
```

```xml
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                           type="readings:relationsType" />
    <xsd:element minOccurs="0" maxOccurs="1" name="attributes"
                                           type="readings:attributesType" />
    <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                           type="readings:measureTypesType" />
  </xsd:sequence>
  <xsd:attribute name="location" type="xsd:string" />
  <xsd:attribute name="extType" type="xsd:string" />
  <xsd:attribute name="extId" type="xsd:string" />
  <xsd:attribute name="modelRef" type="xsd:string" />
  <xsd:attribute name="tenantId" type="xsd:string" />
  <xsd:attribute name="assetLabel" type="xsd:string" />
  <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
  <xsd:sequence>
    <xsd:element name="workEquipment" type="readings:workEquipmentType" />
    <xsd:element name="readingValues" type="readings:readingValuesType" />
  </xsd:sequence>
  <xsd:attribute name="extReadingSetid" type="xsd:string" />
  <xsd:attribute name="timestamp" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
    <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute"
                                       type="readings:attributeType" />
  </xsd:sequence>
</xsd:complexType>
```

```xml
<xsd:complexType name="relationType">
   <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
   <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
     <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
     <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold"
                         type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="measureLabel" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
     <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                               type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
       <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
```

```
          <xsd:attribute name="flowSource" type="xsd:string" />
        <xsd:attribute name="timeout" type="xsd:string" />
        <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
  </xsd:schema>
```

SCHEMA DEGLI ORDINI DI SERVIZIO PER V5.2.0.6

```xml
<?xml version="1.0" encoding="UTF-8"?>


<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2018.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                              type="xsd:integer" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                              type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                              type="xsd:string" />
```

```
        <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                             type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
                             type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                             type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                             type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                             type="xsd:integer" />
        <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                             type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                             type=" xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                              type="so:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
        <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
      </xsd:all>
    </xsd:complexType>
    <xsd:complexType name="attributes">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="assets">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="workorders">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="attribute">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="type" type="xsd:string" />
      <xsd:attribute name="value" type="xsd:string" />
    </xsd:complexType>
    <xsd:complexType name="asset">
      <xsd:attribute name="id" type="xsd:string" />
     <xsd:attribute name="type" type="xsd:string" />
     <xsd:attribute name="relationshipType" type="xsd:string" />
    </xsd:complexType>
    <xsd:complexType name="workorder">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="relationshipType" type="xsd:string" />
    </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
   <xsd:restriction base="xsd:string">
     <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
```

```
    </xsd:restriction>
  </xsd:simpleType>
    <xsd:element name="operations">
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                          type="so:requestType">
          </xsd:element>
        </xsd:sequence>
        <xsd:attribute name="rootTenant" type="xsd:string" />
        <xsd:attribute name="flowSource" type="xsd:string" />
        <xsd:attribute name="timeout" type="xsd:string" />
        <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
</xsd:schema>
```

SCHEMA DEGLI ORDINI DI LAVORO PER V5.2.0.6

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2018.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="TENANT_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                                    type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                         type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="TARGETSTARTDATE"
                                         type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                         type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                         type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                         type="wo:iibDateTime " />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                         type="wo:iibDateTime " />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                         type="xsd:string" />
```

```
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="MAINTENANCE_TYPE"
                                          type="xsd:string" />
```

```xml
            <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_LENGTH_WORKED_ON"
                                                    type="xsd:decimal" />
            <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_STATE"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="WORKER_COMMENT"
                                                    type="xsd:string" />
            <xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                                    maxOccurs="1" minOccurs="0">
            </xsd:element>
            <xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                                    type="wo:attributes" />
            <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
        </xsd:all>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                        type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="flowSource" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                        minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
```

```
                                 maxOccurs="1" minOccurs="1">
     <xsd:annotation>
       <xsd:documentation>
               For a SRCEVTCATEGORY = ALERT or EVENT, this is
               the IOW EVENTTYPE For a SRCEVTCATEGORY =
               WORKORDER, this is the IOW
               WORKORDER DOMAIN For
               a SRCEVTCATEGORY = NOREADING or
               READINGTHRESHOLD, this is the IOW
               MEASUREMENTTYPE
       </xsd:documentation>
     </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                                 minOccurs="0">
   <xsd:annotation>
     <xsd:documentation>
                   For a SRCEVTCATEGORY = ALERT or EVENT, this is
                   the IOW EXTEVENTID For a SRCEVTCATEGORY =
                   WORKORDER, this is the
                   IOW WOEXTID For a
                   SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                   this is the IOW MEASUREMENT_ID (only for WO OUT)
       </xsd:documentation>
     </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">
</xsd:element>
<xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"
                                 maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                                 maxOccurs="1" minOccurs="0">
```

```xml
      </xsd:element>
       <xsd:element name="SOPREFERENCE" type="xsd:string"
                                maxOccurs="1" minOccurs="0"></xsd:element>
    </xsd:all>
  </xsd:complexType>
  <xsd:complexType name="srcEventListType">
    <xsd:sequence>
      <xsd:element name="SRCEVENT" type="wo:srcEventType"
                                maxOccurs="unbounded" minOccurs="0"></xsd:element>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attributes">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="assets">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
</xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

Appendice C: file XSD per la versione 5.2.0.5

SCHEMA DEGLI AVVISI PER V5.2.0.5

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
        xmlns:alert="http://vds.com/alertsType"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="flowSource" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      <xsd:attribute name="requestType" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
```

```xml
    <xsd:documentation>Event data source record</xsd:documentation>
</xsd:annotation>
<xsd:all>
  <!--
     * Minimal properties
     */
  -->
  <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="STARTTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="LASTUPDATEDTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />

  <xsd:element name="ENDTS" type="alert:iibDateTime" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
    </xsd:all>

  </xsd:complexType>

  <xsd:simpleType name="iibDateTime">

    <xsd:restriction base="xsd:string">

     <xsd:pattern

Value= "\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})"
/>

      </xsd:restriction>

  </xsd:simpleType>

</xsd:schema>
```

SCHEMA DEGLI ASSET PER V5.2.0.5

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2015, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"

        xmlns:asset="http://vds.com/assetTypes"

        xmlns:xsd="http://www.w3.org/2001/XMLSchema"

        elementFormDefault="qualified">

  <xsd:complexType name="modelrefType">

    <xsd:annotation>

      <xsd:documentation>modelref will refer to the ID of the semantic

                model for a multi tenant environment.

                If the id attribute of modelref

                is empty all the request will

                executed played against the default model. </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />
```

```
    </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType is made to describe relations between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />

    <xsd:attribute name="no_reading_timeout" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />
```

```xml
      <xsd:attribute name="measureLabel" type="xsd:string" />

      <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypesType">

   <xsd:sequence>

      <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"
                              type="asset:measureTypeType" />

   </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="attributeType">

   <xsd:sequence>

      <xsd:element minOccurs="0" maxOccurs="1" name="value"
                        type="xsd:string" />

      <xsd:element minOccurs="0" maxOccurs="1" name="unit"
                              type="xsd:string" />

   </xsd:sequence>

   <xsd:attribute name="type" type="xsd:string" />

   <xsd:attribute name="name" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="assetType">

   <xsd:annotation>

      <xsd:documentation>

            AssetType is to describe the asset to create/update/delete.

      </xsd:documentation>

   </xsd:annotation>

   <xsd:sequence>

      <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

      <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />

      <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />
```

```
      <xsd:element minOccurs="0" name="measureTypes" type="asset:measureTypesType" />

   </xsd:sequence>

   <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

   <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

   <xsd:attribute name="assetLabel" type="xsd:string" />

   <xsd:attribute name="assetDescription" type="xsd:string" />

   <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

   <xsd:annotation>

      <xsd:documentation>

                  Request is the actual operation that will

                   be executed. It captures the following informations :

                   - request type :

                   CREATE / UPDATE / DELETE

                   - Assets data (attributes, relations etc...)

                   the request type must be one of the following :

                    - INSERT : create an asset.

              - DELETE : delete an asset.

                   - UPDATE : update an asset.

      </xsd:documentation>

   </xsd:annotation>

   <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

   </xsd:sequence>

   <xsd:attribute name="type" type="xsd:string" />

</xsd:complexType>

<xsd:element name="operation">

   <xsd:annotation>
```

```
<xsd:documentation>

   Operation is the root element of the xml file. It

    will contain all the requests.

    rootTenant : root tenant for the ingested data.

   timestamp : xml file generation date.

  </xsd:documentation>

 </xsd:annotation>

 <xsd:complexType>

  <xsd:sequence>

    <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

   </xsd:sequence>

   <xsd:attribute name="rootTenant" type="xsd:string" />

   <xsd:attribute name="flowSource" type="xsd:string" />

   <xsd:attribute name="timestamp" type="xsd:string" />

   <xsd:attribute name="timeout" type="xsd:string" />

   <xsd:attribute name="timeoutTypeId" type="xsd:string" />

  </xsd:complexType>

 </xsd:element>

</xsd:schema>
```

SCHEMA DELLE LETTURE DELE MISURAZIONI PER V5.2.0.5

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.

 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.

 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
        xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="description"    type="xsd:string" />
```

```
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                    type="readings:relationsType" />
    <xsd:element minOccurs="0" maxOccurs="1" name="attributes"
                                    type="readings:attributesType" />
    <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                    type="readings:measureTypesType" />
  </xsd:sequence>
  <xsd:attribute name="location" type="xsd:string" />
  <xsd:attribute name="extType" type="xsd:string" />
  <xsd:attribute name="extId" type="xsd:string" />
  <xsd:attribute name="modelRef" type="xsd:string" />
  <xsd:attribute name="tenantId" type="xsd:string" />
  <xsd:attribute name="assetLabel" type="xsd:string" />
  <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
  <xsd:sequence>
    <xsd:element name="workEquipment" type="readings:workEquipmentType" />
    <xsd:element name="readingValues" type="readings:readingValuesType" />
  </xsd:sequence>
  <xsd:attribute name="extReadingSetid" type="xsd:string" />
  <xsd:attribute name="timestamp" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
    <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute"
                                    type="readings:attributeType" />
  </xsd:sequence>
</xsd:complexType>
```

```xml
<xsd:complexType name="relationType">
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
 <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold"
                        type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="measureLabel" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                             type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
```

```
            <xsd:attribute name="flowSource" type="xsd:string" />
          <xsd:attribute name="timeout" type="xsd:string" />
          <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
</xsd:schema>
```

SCHEMA DEGLI ORDINI DI SERVIZIO PER V5.2.0.5

```xml
<?xml version="1.0" encoding="UTF-8"?>


<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
          xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
          elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                                type="xsd:integer" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                                type="so:iibDateTime" />
      <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
```

```xml
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                    type=" xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                                     type="so:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
        <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
      </xsd:all>
    </xsd:complexType>
    <xsd:complexType name="attributes">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="assets">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="workorders">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="attribute">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="type" type="xsd:string" />
      <xsd:attribute name="value" type="xsd:string" />
    </xsd:complexType>
    <xsd:complexType name="asset">
      <xsd:attribute name="id" type="xsd:string" />
     <xsd:attribute name="type" type="xsd:string" />
      <xsd:attribute name="relationshipType" type="xsd:string" />
    </xsd:complexType>
    <xsd:complexType name="workorder">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="relationshipType" type="xsd:string" />
    </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
   <xsd:restriction base="xsd:string">
     <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
   </xsd:restriction>
  </xsd:simpleType>
  <xsd:element name="operations">
```

```
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                      type="so:requestType">
        </xsd:element>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="flowSource" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
</xsd:schema>
```

SCHEMA DEGLI ORDINI DI LAVORO PER V5.2.0.5

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                              type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                              type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="MODEL_ID"
                                              type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                              type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                     type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                          type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE"
                                          type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                          type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                          type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                          type="wo:iibDateTime " />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                          type="wo:iibDateTime " />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                          type="xsd:string" />
```

```
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="MAINTENANCE_TYPE"
                                        type="xsd:string" />
```

```xml
            <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_LENGTH_WORKED_ON"
                                        type="xsd:decimal" />
          <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_STATE"
                                        type="xsd:string" />
          <xsd:element minOccurs="0" maxOccurs="1" name="WORKER_COMMENT"
                                        type="xsd:string" />
          <xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                            maxOccurs="1" minOccurs="0">
          </xsd:element>
          <xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                              type="wo:attributes" />
          <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
        </xsd:all>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                    type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="flowSource" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                          minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
```

```
                                maxOccurs="1" minOccurs="1">
    <xsd:annotation>
      <xsd:documentation>
            For a SRCEVTCATEGORY = ALERT or EVENT, this is
            the IOW EVENTTYPE For a SRCEVTCATEGORY =
            WORKORDER, this is the IOW
            WORKORDER DOMAIN For
            a SRCEVTCATEGORY = NOREADING or
            READINGTHRESHOLD, this is the IOW
            MEASUREMENTTYPE
      </xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                                minOccurs="0">
    <xsd:annotation>
      <xsd:documentation>
                    For a SRCEVTCATEGORY = ALERT or EVENT, this is
                    the IOW EXTEVENTID For a SRCEVTCATEGORY =
                    WORKORDER, this is the
                    IOW WOEXTID For a
                    SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                    this is the IOW MEASUREMENT_ID (only for WO OUT)
      </xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">
</xsd:element>
<xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"
                                maxOccurs="1" minOccurs="0">
</xsd:element>
<xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                                maxOccurs="1" minOccurs="0">
```

```xml
        </xsd:element>
         <xsd:element name="SOPREFERENCE" type="xsd:string"
                                    maxOccurs="1" minOccurs="0"></xsd:element>
      </xsd:all>
   </xsd:complexType>
   <xsd:complexType name="srcEventListType">
     <xsd:sequence>
       <xsd:element name="SRCEVENT" type="wo:srcEventType"
                                    maxOccurs="unbounded" minOccurs="0"></xsd:element>
     </xsd:sequence>
   </xsd:complexType>
   <xsd:complexType name="attributes">
     <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
     </xsd:sequence>
   </xsd:complexType>
   <xsd:complexType name="assets">
     <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
     </xsd:sequence>
   </xsd:complexType>
   <xsd:complexType name="attribute">
     <xsd:attribute name="id" type="xsd:string" />
     <xsd:attribute name="type" type="xsd:string" />
     <xsd:attribute name="value" type="xsd:string" />
   </xsd:complexType>
   <xsd:complexType name="asset">
     <xsd:attribute name="id" type="xsd:string" />
     <xsd:attribute name="type" type="xsd:string" />
     <xsd:attribute name="relationshipType" type="xsd:string" />
   </xsd:complexType>
   <xsd:simpleType name="iibDateTime">
     <xsd:restriction base="xsd:string">
       <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
</xsd:restriction>
   </xsd:simpleType>
</xsd:schema>
```

Appendice D: file XSD per la versione 5.2.0.4

VDS_IOW-IN-ALERTS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
        xmlns:alert="http://vds.com/alertsType"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      <xsd:attribute name="requestType" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
      <xsd:documentation>Event data source record</xsd:documentation>
```

```xml
</xsd:annotation>

<xsd:all>
  <!--
    * Minimal properties
    */
  -->

  <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="STARTTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="LASTUPDATEDTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <!--
      * Key/Full properties
      */
    -->
    <!-- Either of (EXTWORKEQUIPMENTID + EXTWORKEQUIPMENTTYPE) or LOCATION is required -->
  <xsd:element name="ENDTS" type="alert:iibDateTime" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
        <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />


        <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
         <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
          <xsd:annotation>
            <xsd:documentation>threshold attribute domain is 0,1 or 2</xsd:documentation>
          </xsd:annotation>
          <xsd:complexType>
            <xsd:attribute name="value" type="xsd:string" />
            <xsd:attribute name="unit" type="xsd:string" />
            <xsd:attribute name="type" type="xsd:string" />
            <xsd:attribute name="threshold_value" type="xsd:string" />
            <xsd:attribute name="threshold" type="xsd:string" />
          </xsd:complexType>
        </xsd:element>
      </xsd:all>
    </xsd:complexType>
    <xsd:simpleType name="iibDateTime">
      <xsd:restriction base="xsd:string">
        <xsd:pattern
Value= "\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})"
/>
      </xsd:restriction>
    </xsd:simpleType>
</xsd:schema>
```

VDS_IOW-IN-ASSETS-CORE_5210.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2015, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"

        xmlns:asset="http://vds.com/assetTypes"

        xmlns:xsd="http://www.w3.org/2001/XMLSchema"

        elementFormDefault="qualified">
  <xsd:complexType name="modelrefType">
    <xsd:annotation>
      <xsd:documentation>modelref will refer to the ID of the semantic

              model for a multi tenant environment.

              If the id attribute of modelref

              is empty all the request will

              executed played against the default model. </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />
```

```
        </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType is made to describe relations between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

     <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

 <xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="3" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />


    <xsd:attribute name="no_reading_timeout" type="xsd:string" />
```

```
      <xsd:attribute name="name" type="xsd:string" />

      <xsd:attribute name="measureLabel" type="xsd:string" />

      <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

  </xsd:complexType>

  <xsd:complexType name="measureTypesType">

    <xsd:sequence>

      <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"

                                  type="asset:measureTypeType" />

    </xsd:sequence>

  </xsd:complexType>

  <xsd:complexType name="attributeType">

    <xsd:sequence>

      <xsd:element minOccurs="0" maxOccurs="1" name="value"

                      type="xsd:string" />

      <xsd:element minOccurs="0" maxOccurs="1" name="unit"

                                  type="xsd:string" />

    </xsd:sequence>

    <xsd:attribute name="type" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />

  </xsd:complexType>

  <xsd:complexType name="assetType">

    <xsd:annotation>

      <xsd:documentation>

          AssetType is to describe the asset to create/update/delete.

      </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

      <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

      <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />
```

```xml
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />

        <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes" type="asset:measureTypesType" />

    </xsd:sequence>

    <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

    <xsd:attribute name="assetLabel" type="xsd:string" />

    <xsd:attribute name="assetDescription" type="xsd:string" />

    <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

    <xsd:annotation>

        <xsd:documentation>

                Request is the actual operation that will

                be executed. It captures the following informations :

                - request type :

                CREATE / UPDATE / DELETE

                - Assets data (attributes, relations etc...)

                the request type must be one of the following :

                 - INSERT : create an asset.

            - DELETE : delete an asset.

                - UPDATE : update an asset.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

    </xsd:sequence>


    <xsd:attribute name="type" type="xsd:string" />

</xsd:complexType>
```

```
<xsd:element name="operation">

  <xsd:annotation>

    <xsd:documentation>

      Operation is the root element of the xml file. It

       will contain all the requests.

       rootTenant : root tenant for the ingested data.

      timestamp : xml file generation date.

     </xsd:documentation>

  </xsd:annotation>

  <xsd:complexType>

    <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

    </xsd:sequence>

    <xsd:attribute name="rootTenant" type="xsd:string" />

    <xsd:attribute name="timestamp" type="xsd:string" />

    <xsd:attribute name="timeout" type="xsd:string" />

    <xsd:attribute name="timeoutTypeId" type="xsd:string" />

  </xsd:complexType>

</xsd:element>

</xsd:schema>
```

VDS_IOW-IN-READINGS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.

 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.

 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
       xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
       elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="0" name="description"   type="xsd:string" />
```

```xml
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                            type="readings:relationsType" />
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="attributes"
                                            type="readings:attributesType" />
        <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                            type="readings:measureTypesType" />
    </xsd:sequence>
    <xsd:attribute name="location" type="xsd:string" />
    <xsd:attribute name="extType" type="xsd:string" />
    <xsd:attribute name="extId" type="xsd:string" />
    <xsd:attribute name="modelRef" type="xsd:string" />
    <xsd:attribute name="tenantId" type="xsd:string" />
    <xsd:attribute name="assetLabel" type="xsd:string" />
    <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
    <xsd:sequence>
        <xsd:element name="workEquipment" type="readings:workEquipmentType" />
        <xsd:element name="readingValues" type="readings:readingValuesType" />
    </xsd:sequence>
    <xsd:attribute name="extReadingSetid" type="xsd:string" />
    <xsd:attribute name="timestamp" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtId" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtType" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
    <xsd:sequence>
        <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
    <xsd:sequence>
        <xsd:element name="attribute" type="readings:attributeType" />
    </xsd:sequence>
```

```xml
</xsd:complexType>
<xsd:complexType name="relationType">
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold"
                       type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                                type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
```

```
        <xsd:attribute name="timeout" type="xsd:string" />
        <xsd:attribute name="timeoutTypeId" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
</xsd:schema>
```

```xml
<?xml version="1.0" encoding="UTF-8"?>

<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                            type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                            type="so:iibDateTime" />
      <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
```

```
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                    type=" xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                                    type="so:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
        <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
      </xsd:all>
</xsd:complexType>

<xsd:complexType name="attributes">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="assets">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="workorders">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
   <xsd:attribute name="type" type="xsd:string" />
   <xsd:attribute name="relationshipType" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="workorder">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
</xsd:complexType>
```

```
  <xsd:simpleType name="iibDateTime">
   <xsd:restriction base="xsd:string">
     <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
   </xsd:restriction>
 </xsd:simpleType>
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                         type="so:requestType">
        </xsd:element>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-WO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                                    type="xsd:string" />
```

```xml
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                       type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                             type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                             type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                             type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                             type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                             type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE"
                                             type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                             type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                             type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                             type="wo:iibDateTime " />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                             type="wo:iibDateTime " />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                             type="xsd:string" />
```

```
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                    type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="MAINTENANCE_TYPE"
                                    type="xsd:string" />
```

```xml
                <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_LENGTH_WORKED_ON"
                                            type="xsd:decimal" />
            <xsd:element minOccurs="0" maxOccurs="1" name="ASSET_STATE"
                                            type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="WORKER_COMMENT"
                                            type="xsd:string" />
            <xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                                maxOccurs="1" minOccurs="0">
            </xsd:element>
            <xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                                type="wo:attributes" />
            <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
          </xsd:all>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                    type="wo:requestType">
        </xsd:element>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
    <xsd:all>
      <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                            minOccurs="1" type="xsd:string">
      </xsd:element>
      <xsd:element name="SRCEVTTYPE" type="xsd:string"
                            maxOccurs="1" minOccurs="1">
```

```
    <xsd:annotation>

      <xsd:documentation>

            For a SRCEVTCATEGORY = ALERT or EVENT, this is

            the IOW EVENTTYPE For a SRCEVTCATEGORY =

            WORKORDER, this is the IOW

            WORKORDER DOMAIN For

            a SRCEVTCATEGORY = NOREADING or

            READINGTHRESHOLD, this is the IOW

            MEASUREMENTTYPE

      </xsd:documentation>

    </xsd:annotation>

</xsd:element>

<xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"

                            minOccurs="0">

    <xsd:annotation>

      <xsd:documentation>

                For a SRCEVTCATEGORY = ALERT or EVENT, this is

                the IOW EXTEVENTID For a SRCEVTCATEGORY =

                WORKORDER, this is the

                IOW WOEXTID For a

                SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,

                this is the IOW MEASUREMENT_ID (only for WO OUT)

      </xsd:documentation>

    </xsd:annotation>

</xsd:element>

<xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">

</xsd:element>

<xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">

</xsd:element>

<xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">

</xsd:element>

<xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"

                            maxOccurs="1" minOccurs="0">

</xsd:element>

<xsd:element name="SRCEVTCOMMENT" type="xsd:string"

                            maxOccurs="1" minOccurs="0">

</xsd:element>
```

```
        <xsd:element name="SOPREFERENCE" type="xsd:string"
                              maxOccurs="1" minOccurs="0"></xsd:element>
      </xsd:all>
   </xsd:complexType>
  <xsd:complexType name="srcEventListType">
    <xsd:sequence>
      <xsd:element name="SRCEVENT" type="wo:srcEventType"
                              maxOccurs="unbounded" minOccurs="0"></xsd:element>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attributes">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="assets">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
   </xsd:complexType>
  <xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[0-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
</xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

Appendice E: file XSD per la versione 5.2.0.3

VDS_IOW-IN-ALERTS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
        xmlns:alert="http://vds.com/alertsType"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
      <xsd:documentation>Event data source record</xsd:documentation>
    </xsd:annotation>
```

```xml
<xsd:all>
  <!--
    * Minimal properties
    */
  -->

  <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="STARTTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="LASTUPDATEDTS" type="alert:iibDateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <!--
      * Key/Full properties
      */
    -->
    <!-- Either of (EXTWORKEQUIPMENTID + EXTWORKEQUIPMENTTYPE) or LOCATION is required -->
  <xsd:element name="ENDTS" type="alert:iibDateTime" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
        <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
         <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
        <xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
          <xsd:annotation>
            <xsd:documentation>threshold attribute domain is 0,1 or 2</xsd:documentation>
          </xsd:annotation>
          <xsd:complexType>
            <xsd:attribute name="value" type="xsd:string" />
            <xsd:attribute name="unit" type="xsd:string" />
            <xsd:attribute name="type" type="xsd:string" />
            <xsd:attribute name="threshold_value" type="xsd:string" />
            <xsd:attribute name="threshold" type="xsd:string" />
          </xsd:complexType>
        </xsd:element>
      </xsd:all>
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[1-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

VDS_IOW-IN-ASSETS-CORE_5210.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2015, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"

        xmlns:asset="http://vds.com/assetTypes"

        xmlns:xsd="http://www.w3.org/2001/XMLSchema"

        elementFormDefault="qualified">

  <xsd:complexType name="modelrefType">

    <xsd:annotation>

      <xsd:documentation>modelref will refer to the ID of the semantic

              model for a multi tenant environment.

              If the id attribute of modelref

              is empty all the request will

              executed played against the default model. </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />
```

```
        </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType is made to describe relations between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

     <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

 <xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="3" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />


    <xsd:attribute name="no_reading_timeout" type="xsd:string" />
```

```
        <xsd:attribute name="name" type="xsd:string" />

        <xsd:attribute name="measureLabel" type="xsd:string" />

        <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

    </xsd:complexType>

    <xsd:complexType name="measureTypesType">

        <xsd:sequence>

            <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"

                                    type="asset:measureTypeType" />

        </xsd:sequence>

    </xsd:complexType>

    <xsd:complexType name="attributeType">

        <xsd:sequence>

            <xsd:element minOccurs="0" maxOccurs="1" name="value"

                        type="xsd:string" />

            <xsd:element minOccurs="0" maxOccurs="1" name="unit"

                                    type="xsd:string" />

        </xsd:sequence>

        <xsd:attribute name="type" type="xsd:string" />

        <xsd:attribute name="name" type="xsd:string" />

    </xsd:complexType>

    <xsd:complexType name="assetType">

        <xsd:annotation>

            <xsd:documentation>

                    AssetType is to describe the asset to create/update/delete.

            </xsd:documentation>

        </xsd:annotation>

        <xsd:sequence>

            <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

            <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />
```

```
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />

    <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes" type="asset:measureTypesType" />

  </xsd:sequence>

  <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

  <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

  <xsd:attribute name="assetLabel" type="xsd:string" />

  <xsd:attribute name="assetDescription" type="xsd:string" />

  <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

  <xsd:annotation>

    <xsd:documentation>

            Request is the actual operation that will

            be executed. It captures the following informations :

            - request type :

            CREATE / UPDATE / DELETE

            - Assets data (attributes, relations etc...)

            the request type must be one of the following :

             - INSERT : create an asset.

        - DELETE : delete an asset.

            - UPDATE : update an asset.

    </xsd:documentation>

  </xsd:annotation>

  <xsd:sequence>

    <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

  </xsd:sequence>


  <xsd:attribute name="type" type="xsd:string" />

</xsd:complexType>
```

```
<xsd:element name="operation">

  <xsd:annotation>

    <xsd:documentation>

      Operation is the root element of the xml file. It

       will contain all the requests.

        rootTenant : root tenant for the ingested data.

       timestamp : xml file generation date.

     </xsd:documentation>

  </xsd:annotation>

  <xsd:complexType>

    <xsd:sequence>

      <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

    </xsd:sequence>

    <xsd:attribute name="rootTenant" type="xsd:string" />

    <xsd:attribute name="timestamp" type="xsd:string" />

    <xsd:attribute name="timeout" type="xsd:string" />

    <xsd:attribute name="timeoutTypeId" type="xsd:string" />

  </xsd:complexType>

</xsd:element>

</xsd:schema>
```

VDS_IOW-IN-READINGS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.

 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.

 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
        xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="0" name="description"    type="xsd:string" />
```

```
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                        type="readings:relationsType" />
        <xsd:element minOccurs="0" maxOccurs="unbounded" name="attributes"
                                        type="readings:attributesType" />
        <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                        type="readings:measureTypesType" />
    </xsd:sequence>
    <xsd:attribute name="location" type="xsd:string" />
    <xsd:attribute name="extType" type="xsd:string" />
    <xsd:attribute name="extId" type="xsd:string" />
    <xsd:attribute name="modelRef" type="xsd:string" />
    <xsd:attribute name="tenantId" type="xsd:string" />
    <xsd:attribute name="assetLabel" type="xsd:string" />
    <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
    <xsd:sequence>
        <xsd:element name="workEquipment" type="readings:workEquipmentType" />
        <xsd:element name="readingValues" type="readings:readingValuesType" />
    </xsd:sequence>
    <xsd:attribute name="extReadingSetid" type="xsd:string" />
    <xsd:attribute name="timestamp" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtId" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtType" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
    <xsd:sequence>
        <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
    <xsd:sequence>
        <xsd:element name="attribute" type="readings:attributeType" />
    </xsd:sequence>
```

```xml
</xsd:complexType>
<xsd:complexType name="relationType">
   <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
   <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
     <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
     <xsd:element minOccurs="0" maxOccurs="unbounded" name="threshold"
                        type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="no_reading_timeout" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
     <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                                 type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
       <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
```

```
        <xsd:attribute name="timeout" type="xsd:string" />

        <xsd:attribute name="timeoutTypeId" type="xsd:string" />

      </xsd:complexType>

    </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-SO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>

<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                                type="so:iibDateTime" />
      <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
```

```
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                                    type="so:iibDateTime" />
        <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                                    type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                    type=" xsd:string" />


        <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                                    type="so:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
        <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
    </xsd:all>
</xsd:complexType>

<xsd:complexType name="attributes">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="assets">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="workorders">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
   <xsd:attribute name="type" type="xsd:string" />
   <xsd:attribute name="relationshipType" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="workorder">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
</xsd:complexType>
```

```xml
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[1-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                        type="so:requestType">
        </xsd:element>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-WO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                                  type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                                  type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                                  type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                                  type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                                  type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                                  type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                                  type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                    type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                            type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                            type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                            type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                            type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                            type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE"
                                            type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                            type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                            type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                            type="wo:iibDateTime " />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                            type="wo:iibDateTime " />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                            type="xsd:string" />
```

```xml
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                        type="xsd:string" />
<xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                        maxOccurs="1" minOccurs="0">
</xsd:element>
```

```xml
        <xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                              type="wo:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
      </xsd:all>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
<xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                   type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                             minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
                             maxOccurs="1" minOccurs="1">
      <xsd:annotation>
        <xsd:documentation>
                For a SRCEVTCATEGORY = ALERT or EVENT, this is
                the IOW EVENTTYPE For a SRCEVTCATEGORY =
                WORKORDER, this is the IOW
                WORKORDER DOMAIN For
                a SRCEVTCATEGORY = NOREADING or
                READINGTHRESHOLD, this is the IOW
                MEASUREMENTTYPE
```

```xml
        </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                             minOccurs="0">
      <xsd:annotation>
        <xsd:documentation>
                    For a SRCEVTCATEGORY = ALERT or EVENT, this is
                    the IOW EXTEVENTID For a SRCEVTCATEGORY =
                    WORKORDER, this is the
                    IOW WOEXTID For a
                    SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                    this is the IOW MEASUREMENT_ID (only for WO OUT)
        </xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">
    </xsd:element>
    <xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"
                             maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                             maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SOPREFERENCE" type="xsd:string"
                             maxOccurs="1" minOccurs="0"></xsd:element>
  </xsd:all>
 </xsd:complexType>
<xsd:complexType name="srcEventListType">
  <xsd:sequence>
    <xsd:element name="SRCEVENT" type="wo:srcEventType"
                             maxOccurs="unbounded" minOccurs="0"></xsd:element>
  </xsd:sequence>
```

```
    </xsd:complexType>
  <xsd:complexType name="attributes">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="assets">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
   </xsd:complexType>
   <xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
  </xsd:complexType>
  <xsd:simpleType name="iibDateTime">
    <xsd:restriction base="xsd:string">
      <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[1-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

Appendice F: file XSD per la versione 5.2.0.2

VDS_IOW-IN-ALERTS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
        xmlns:alert="http://vds.com/alertsType"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
      <xsd:attribute name="rootTenant" type="xsd:string" />
      <xsd:attribute name="timeout" type="xsd:string" />
      <xsd:attribute name="timeoutTypeId" type="xsd:string" />
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
      <xsd:documentation>Event data source record</xsd:documentation>
    </xsd:annotation>
```

```
<xsd:all>
  <!--
    * Minimal properties
    */
  -->

  <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="STARTTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="LASTUPDATEDTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <!--
      * Key/Full properties
      */
    -->
    <!-- Either of (EXTWORKEQUIPMENTID + EXTWORKEQUIPMENTTYPE) or LOCATION is required -->
  <xsd:element name="ENDTS" type="xsd:dateTime" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```
            <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
             <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
            <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
            <xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
              <xsd:annotation>
                <xsd:documentation>threshold attribute domain is 0,1 or 2</xsd:documentation>
              </xsd:annotation>
              <xsd:complexType>
                <xsd:attribute name="value" type="xsd:string" />
                <xsd:attribute name="unit" type="xsd:string" />
                <xsd:attribute name="type" type="xsd:string" />
                <xsd:attribute name="threshold_value" type="xsd:string" />
                <xsd:attribute name="threshold" type="xsd:string" />
              </xsd:complexType>
            </xsd:element>
          </xsd:all>
        </xsd:complexType>
      </xsd:schema>
```

VDS_IOW-IN-ASSETS-CORE_5210.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2015, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"

        xmlns:asset="http://vds.com/assetTypes"

        xmlns:xsd="http://www.w3.org/2001/XMLSchema"

        elementFormDefault="qualified">

  <xsd:complexType name="modelrefType">

    <xsd:annotation>

      <xsd:documentation>modelref will refer to the ID of the semantic

                model for a multi tenant environment.

                If the id attribute of modelref

                is empty all the request will

                executed played against the default model. </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>
```

```
        <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />

    </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType is made to describe relations between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

 <xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="3" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />
```

```xml
      <xsd:attribute name="no_reading_timeout" type="xsd:string" />

      <xsd:attribute name="name" type="xsd:string" />

      <xsd:attribute name="measureLabel" type="xsd:string" />

      <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypesType">

   <xsd:sequence>

      <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"

                              type="asset:measureTypeType" />

   </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="attributeType">

   <xsd:sequence>

      <xsd:element minOccurs="0" maxOccurs="1" name="value"

                     type="xsd:string" />

      <xsd:element minOccurs="0" maxOccurs="1" name="unit"

                              type="xsd:string" />

   </xsd:sequence>

   <xsd:attribute name="type" type="xsd:string" />

   <xsd:attribute name="name" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="assetType">

   <xsd:annotation>

      <xsd:documentation>

            AssetType is to describe the asset to create/update/delete.

      </xsd:documentation>

   </xsd:annotation>

   <xsd:sequence>
```

```xml
            <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

            <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />

            <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />

            <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes" type="asset:measureTypesType" />

        </xsd:sequence>

        <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

        <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

        <xsd:attribute name="assetLabel" type="xsd:string" />

        <xsd:attribute name="assetDescription" type="xsd:string" />

        <xsd:attribute name="tenantId" type="xsd:string" />

    </xsd:complexType>

    <xsd:complexType name="requestType">

        <xsd:annotation>

            <xsd:documentation>

                    Request is the actual operation that will

                     be executed. It captures the following informations :

                     - request type :

                    CREATE / UPDATE / DELETE

                     - Assets data (attributes, relations etc...)

                     the request type must be one of the following :

                      - INSERT : create an asset.

                  - DELETE : delete an asset.

                       - UPDATE : update an asset.

            </xsd:documentation>

        </xsd:annotation>

        <xsd:sequence>

            <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

        </xsd:sequence>
```

```xml
      <xsd:attribute name="type" type="xsd:string" />

   </xsd:complexType>

   <xsd:element name="operation">

      <xsd:annotation>

         <xsd:documentation>

            Operation is the root element of the xml file. It

             will contain all the requests.

             rootTenant : root tenant for the ingested data.

            timestamp : xml file generation date.

          </xsd:documentation>

      </xsd:annotation>

      <xsd:complexType>

         <xsd:sequence>

            <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

         </xsd:sequence>

         <xsd:attribute name="rootTenant" type="xsd:string" />

         <xsd:attribute name="timestamp" type="xsd:string" />

         <xsd:attribute name="timeout" type="xsd:string" />

         <xsd:attribute name="timeoutTypeId" type="xsd:string" />

      </xsd:complexType>

   </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-READINGS-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of IBM
 *
 * 5725-D69
 *
 * © Copyright International Business Machines Corporation 2012.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
      xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="0" name="description"    type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                         type="readings:relationsType" />
```

```xml
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="attributes"
                                          type="readings:attributesType" />
      <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                          type="readings:measureTypesType" />
    </xsd:sequence>
    <xsd:attribute name="location" type="xsd:string" />
    <xsd:attribute name="extType" type="xsd:string" />
    <xsd:attribute name="extId" type="xsd:string" />
    <xsd:attribute name="modelRef" type="xsd:string" />
    <xsd:attribute name="assetLabel" type="xsd:string" />
    <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
    <xsd:sequence>
        <xsd:element name="workEquipment" type="readings:workEquipmentType" />
        <xsd:element name="readingValues" type="readings:readingValuesType" />
    </xsd:sequence>
    <xsd:attribute name="extReadingSetid" type="xsd:string" />
    <xsd:attribute name="timestamp" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtId" type="xsd:string" />
    <xsd:attribute name="extRelatedEvtType" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
    <xsd:sequence>
        <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
    <xsd:sequence>
        <xsd:element name="attribute" type="readings:attributeType" />
    </xsd:sequence>
</xsd:complexType>
```

```
<xsd:complexType name="relationType">
   <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
   <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
 </xsd:complexType>
 <xsd:complexType name="relationsType">
   <xsd:sequence>
      <xsd:element name="relation" type="readings:relationType" />
   </xsd:sequence>
 </xsd:complexType>
 <xsd:complexType name="thresholdType">
   <xsd:attribute name="range" type="xsd:string" />
   <xsd:attribute name="level" type="xsd:string" />
 </xsd:complexType>
 <xsd:complexType name="measureTypeType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="3" name="threshold"
                        type="readings:thresholdType" />
   </xsd:sequence>
   <xsd:attribute name="unit" type="xsd:string" />
   <xsd:attribute name="name" type="xsd:string" />
   <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
 </xsd:complexType>
 <xsd:complexType name="measureTypesType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                              type="readings:measureTypeType" />
   </xsd:sequence>
 </xsd:complexType>
 <xsd:element name="readings">
   <xsd:complexType>
     <xsd:sequence>
        <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
     </xsd:sequence>
   </xsd:complexType>
 </xsd:element>
</xsd:schema>
```

VDS_IOW-IN-SO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>

<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
                          type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
```

```
                                     type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                                     type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                                     type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                                     type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                                     type="xsd:string" />
        <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                     type="xsd:string" />

        <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                                     type="so:attributes" />
        <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
        <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
    </xsd:all>
</xsd:complexType>

<xsd:complexType name="attributes">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="assets">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="workorders">
    <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
   <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="workorder">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="relationshipType" type="xsd:string" />
</xsd:complexType>
```

```
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                      type="so:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>

</xsd:schema>
```

VDS_IOW-IN-WO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                              type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                              type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                              type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                              type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                  type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                        type="wo:iibDateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                        type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                        type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE"
                                        type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                        type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                        type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                        type="wo:iibDateTime" />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                        type="wo:iibDateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                        type="xsd:string" />
```

```xml
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                          type="xsd:string" />
  <xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                          type="xsd:string" />
  <xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                          maxOccurs="1" minOccurs="0">
</xsd:element>
```

```xml
            <xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                                    type="wo:attributes" />
            <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
        </xsd:all>
      </xsd:complexType>
   </xsd:element>
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                        type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
   </xsd:complexType>
 </xsd:element>
 <xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                                minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
                                maxOccurs="1" minOccurs="1">
      <xsd:annotation>
        <xsd:documentation>
                For a SRCEVTCATEGORY = ALERT or EVENT, this is
                the IOW EVENTTYPE For a SRCEVTCATEGORY =
                WORKORDER, this is the IOW
                WORKORDER DOMAIN For
                a SRCEVTCATEGORY = NOREADING or
                READINGTHRESHOLD, this is the IOW
                MEASUREMENTTYPE
```

```xml
            </xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                                minOccurs="0">
        <xsd:annotation>
          <xsd:documentation>
                        For a SRCEVTCATEGORY = ALERT or EVENT, this is
                        the IOW EXTEVENTID For a SRCEVTCATEGORY =
                        WORKORDER, this is the
                        IOW WOEXTID For a
                        SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                        this is the IOW MEASUREMENT_ID (only for WO OUT)
          </xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTDATE" type="wo:iibDateTime" maxOccurs="1" minOccurs="1">
    </xsd:element>
    <xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUETS" type="wo:iibDateTime"
                                maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                                maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SOPREFERENCE" type="xsd:string"
                                maxOccurs="1" minOccurs="0"></xsd:element>
  </xsd:all>
 </xsd:complexType>
<xsd:complexType name="srcEventListType">
  <xsd:sequence>
    <xsd:element name="SRCEVENT" type="wo:srcEventType"
                                maxOccurs="unbounded" minOccurs="0"></xsd:element>
  </xsd:sequence>
```

```xml
    </xsd:complexType>

    <xsd:complexType name="attributes">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
      </xsd:sequence>
    </xsd:complexType>

    <xsd:complexType name="assets">
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
      </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="attribute">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="type" type="xsd:string" />
      <xsd:attribute name="value" type="xsd:string" />
     </xsd:complexType>
     <xsd:complexType name="asset">
      <xsd:attribute name="id" type="xsd:string" />
      <xsd:attribute name="type" type="xsd:string" />
    </xsd:complexType>
    <xsd:simpleType name="iibDateTime">
      <xsd:restriction base="xsd:string">
        <xsd:pattern
value="\d{4}-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])\s(0[0-9]|[1][0-9]|2[1-3]):([0-5][0-9]):([0-5][0-9]).([0-9]{3})" />
      </xsd:restriction>
    </xsd:simpleType>
</xsd:schema>
```

Appendice G: file XSD per la versione 5.2.0.1

VDS_IOW-IN-ALERTS-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2012, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
         xmlns:alert="http://vds.com/alertsType"
         xmlns:xsd="http://www.w3.org/2001/XMLSchema"
         elementFormDefault="qualified">
   <xsd:element name="operations">
     <xsd:complexType>
       <xsd:sequence>
         <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
       </xsd:sequence>
       <xsd:attribute name="rootTenant" type="xsd:string" />
       <xsd:attribute name="timeout" type="xsd:string" />
       <xsd:attribute name="timeoutTypeId" type="xsd:string" />
     </xsd:complexType>
   </xsd:element>
   <xsd:complexType name="recordType">
     <xsd:annotation>
       <xsd:documentation>Event data source record</xsd:documentation>
     </xsd:annotation>
```

```xml
<xsd:all>
  <!--
     * Minimal properties
     */
  -->

  <xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="TENANT_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="MODEL_ID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="STARTTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="LASTUPDATEDTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
  <xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="EVENTSUBTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="COSTS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CONSEQUENCES" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
  <xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />
    <!--
       * Key/Full properties
       */
    -->
    <!-- Either of (EXTWORKEQUIPMENTID + EXTWORKEQUIPMENTTYPE) or LOCATION is required -->
  <xsd:element name="ENDTS" type="xsd:dateTime" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
  <xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
```

```xml
            <xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
             <xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
            <xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
            <xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
              <xsd:annotation>
                <xsd:documentation>threshold attribute domain is 0,1 or 2</xsd:documentation>
              </xsd:annotation>
              <xsd:complexType>
                <xsd:attribute name="value" type="xsd:string" />
                <xsd:attribute name="unit" type="xsd:string" />
                <xsd:attribute name="type" type="xsd:string" />
                <xsd:attribute name="threshold_value" type="xsd:string" />
                <xsd:attribute name="threshold" type="xsd:string" />
              </xsd:complexType>
            </xsd:element>
        </xsd:all>
      </xsd:complexType>
</xsd:schema>
```

VDS_IOW-IN-ASSETS-CORE_5210.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of Veolia Environment-VE and IBM
 *
 * 5725-D69
 *
 * © Copyright Veolia Environment-VE 2017.
 * © Copyright International Business Machines Corporation 2015, 2017.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/assetTypes"
        xmlns:asset="http://vds.com/assetTypes"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="modelrefType">
    <xsd:annotation>
      <xsd:documentation>modelref will refer to the ID of the semantic
              model for a multi tenant environment.
              If the id attribute of modelref
              is empty all the request will
              executed played against the default model. </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
```

```xml
        <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />

    </xsd:sequence>

    <xsd:attribute name="id" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationType">

    <xsd:annotation>

        <xsd:documentation>

                RelationType is made to describe relations between assets.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:attribute name="relationName" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="relationsType">

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="thresholdType">

    <xsd:attribute name="range" type="xsd:string" />

    <xsd:attribute name="level" type="xsd:string" />

</xsd:complexType>

 <xsd:complexType name="measureTypeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="3" name="threshold" type="asset:thresholdType" />

    </xsd:sequence>

    <xsd:attribute name="unit" type="xsd:string" />
```

```xml
    <xsd:attribute name="no_reading_timeout" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />

    <xsd:attribute name="measureLabel" type="xsd:string" />

    <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="measureTypesType">

    <xsd:sequence>

        <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"

                                type="asset:measureTypeType" />

    </xsd:sequence>

</xsd:complexType>

<xsd:complexType name="attributeType">

    <xsd:sequence>

        <xsd:element minOccurs="0" maxOccurs="1" name="value"

                        type="xsd:string" />

        <xsd:element minOccurs="0" maxOccurs="1" name="unit"

                                type="xsd:string" />

    </xsd:sequence>

    <xsd:attribute name="type" type="xsd:string" />

    <xsd:attribute name="name" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="assetType">

    <xsd:annotation>

        <xsd:documentation>

                AssetType is to describe the asset to create/update/delete.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>
```

```xml
        <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />

        <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />

        <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />

        <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes" type="asset:measureTypesType" />

    </xsd:sequence>

    <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />

    <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />

    <xsd:attribute name="assetLabel" type="xsd:string" />

    <xsd:attribute name="assetDescription" type="xsd:string" />

    <xsd:attribute name="tenantId" type="xsd:string" />

</xsd:complexType>

<xsd:complexType name="requestType">

    <xsd:annotation>

        <xsd:documentation>

                    Request is the actual operation that will

                    be executed. It captures the following informations :

                    - request type :

                    CREATE / UPDATE / DELETE

                    - Assets data (attributes, relations etc...)

                    the request type must be one of the following :

                     - INSERT : create an asset.

        -           DELETE : delete an asset.

                    - UPDATE : update an asset.

        </xsd:documentation>

    </xsd:annotation>

    <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />

    </xsd:sequence>
```

```
    <xsd:attribute name="type" type="xsd:string" />

  </xsd:complexType>

  <xsd:element name="operation">

    <xsd:annotation>

      <xsd:documentation>

        Operation is the root element of the xml file. It

         will contain all the requests.

         rootTenant : root tenant for the ingested data.

        timestamp : xml file generation date.

       </xsd:documentation>

    </xsd:annotation>

    <xsd:complexType>

      <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

      </xsd:sequence>

      <xsd:attribute name="rootTenant" type="xsd:string" />

      <xsd:attribute name="timestamp" type="xsd:string" />

      <xsd:attribute name="timeout" type="xsd:string" />

      <xsd:attribute name="timeoutTypeId" type="xsd:string" />

    </xsd:complexType>

  </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-READINGS-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of IBM
 *
 * 5725-D69
 *
 * © Copyright International Business Machines Corporation 2012.
 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
 -->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
      xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="0" name="description"    type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                          type="readings:relationsType" />
```

```xml
            <xsd:element minOccurs="0" maxOccurs="unbounded" name="attributes"
                                             type="readings:attributesType" />
        <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                             type="readings:measureTypesType" />
     </xsd:sequence>
     <xsd:attribute name="location" type="xsd:string" />
     <xsd:attribute name="extType" type="xsd:string" />
     <xsd:attribute name="extId" type="xsd:string" />
     <xsd:attribute name="modelRef" type="xsd:string" />
     <xsd:attribute name="assetLabel" type="xsd:string" />
     <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
   <xsd:sequence>
      <xsd:element name="workEquipment" type="readings:workEquipmentType" />
      <xsd:element name="readingValues" type="readings:readingValuesType" />
   </xsd:sequence>
   <xsd:attribute name="extReadingSetid" type="xsd:string" />
   <xsd:attribute name="timestamp" type="xsd:string" />
   <xsd:attribute name="extRelatedEvtId" type="xsd:string" />
   <xsd:attribute name="extRelatedEvtType" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
   </xsd:sequence>
   <xsd:attribute name="type" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
   <xsd:sequence>
      <xsd:element name="attribute" type="readings:attributeType" />
   </xsd:sequence>
</xsd:complexType>
```

```
<xsd:complexType name="relationType">
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="3" name="threshold"
                       type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                          type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
</xsd:schema>
```

VDS_IOW-IN-SO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>


<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/serviceOrdersType"
        xmlns:so="http://vds.com/serviceOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="serviceorder" type="so:serviceOrder" />
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="serviceOrder">
    <xsd:all>
      <xsd:element minOccurs="0" maxOccurs="1" name="EXTERNAL_ID"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="EAM_ID"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="GIS_ID"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="NAME"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_NO"
                               type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                               type="xsd:string" />


      <xsd:element minOccurs="0" maxOccurs="1" name="REGISTRATION_DATE"
```

```
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="OPENING_DATE"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_DATE"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="ATTACHMENTS"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="COMPLETION_STATUS"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="STATUS"
                                type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                type="xsd:dateTime" />

      <xsd:element minOccurs="0" maxOccurs="1" name="customServiceOrderAttributes"
                                type="so:attributes" />
      <xsd:element minOccurs="0" maxOccurs="1" name="assets" type="so:assets" />
      <xsd:element minOccurs="0" maxOccurs="1" name="workorders" type="so:workorders" />
    </xsd:all>
</xsd:complexType>

<xsd:complexType name="attributes">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="so:attribute" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="assets">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="so:asset" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="workorders">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder" type="so:workorder" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="attribute">
  <xsd:attribute name="id" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
  <xsd:attribute name="value" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="asset">
  <xsd:attribute name="id" type="xsd:string" />
</xsd:complexType>

<xsd:complexType name="workorder">

  <xsd:attribute name="id" type="xsd:string" />
  <xsd:attribute name="relationshipType" type="xsd:string" />
```

```xml
      </xsd:complexType>
      <xsd:element name="operations">
        <xsd:complexType>
          <xsd:sequence>
            <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                          type="so:requestType">
            </xsd:element>
          </xsd:sequence>
          <xsd:attribute name="rootTenant" type="xsd:string" />
          <xsd:attribute name="timeout" type="xsd:string" />
          <xsd:attribute name="timeoutTypeId" type="xsd:string" />
        </xsd:complexType>
      </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-WO-CORE_5201.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
# © Copyright Veolia Environment-VE 2016, 2017.
#
# Users Restricted Rights - Use, duplication or
# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="TENANT_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="MODEL_ID"
                                                    type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT"
                                                    type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION"
                                                    type="xsd:string" />
```

```xml
<xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE"
                                 type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="FAILURE"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE"
                                         type="xsd:dateTime" />
 <xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE"
                                         type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY"
                                         type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE"
                                         type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE"
                                         type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE"
                                         type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE"
                                         type="xsd:dateTime" />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS"
                                         type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE"
                                         type="xsd:string" />
```

```
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="customWorkOrderAttributes"
                                          type="wo:attributes" />
<xsd:element minOccurs="0" maxOccurs="1" name="assets" type="wo:assets" />
<xsd:element minOccurs="0" maxOccurs="1" name="URL"
                                          type="xsd:string" />
 <xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTTYPE"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD"
                                          type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ISSUERCOMPANY"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="AFFECTED"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTDETAILS"
                                          type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT"
                                          type="xsd:string" />
```

```
            <xsd:element minOccurs="0" maxOccurs="1" name="SITE_ID"
                                            type="xsd:string" />
            <xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                                            maxOccurs="1" minOccurs="0">
            </xsd:element>
          </xsd:all>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="request"
                                    type="wo:requestType">
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="rootTenant" type="xsd:string" />
    <xsd:attribute name="timeout" type="xsd:string" />
    <xsd:attribute name="timeoutTypeId" type="xsd:string" />
  </xsd:complexType>
</xsd:element>
<xsd:complexType name="srcEventType">
  <xsd:all>
    <xsd:element name="SRCEVTCATEGORY" maxOccurs="1"
                            minOccurs="1" type="xsd:string">
    </xsd:element>
    <xsd:element name="SRCEVTTYPE" type="xsd:string"
                            maxOccurs="1" minOccurs="1">
      <xsd:annotation>
        <xsd:documentation>
              For a SRCEVTCATEGORY = ALERT or EVENT, this is
              the IOW EVENTTYPE For a SRCEVTCATEGORY =
              WORKORDER, this is the IOW
              WORKORDER DOMAIN For
```

```
                    a SRCEVTCATEGORY = NOREADING or
                    READINGTHRESHOLD, this is the IOW
                    MEASUREMENTTYPE
            </xsd:documentation>

        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1"
                            minOccurs="0">
        <xsd:annotation>
            <xsd:documentation>
                        For a SRCEVTCATEGORY = ALERT or EVENT, this is
                        the IOW EXTEVENTID For a SRCEVTCATEGORY =
                        WORKORDER, this is the
                        IOW WOEXTID For a
                        SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                        this is the IOW MEASUREMENT_ID (only for WO OUT)
            </xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SRCEVTDATE" type="xsd:dateTime" maxOccurs="1" minOccurs="1">
    </xsd:element>
    <xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCURRVALUETS" type="xsd:dateTime"
                            maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                            maxOccurs="1" minOccurs="0">
    </xsd:element>
    <xsd:element name="SOPREFERENCE" type="xsd:string"
                            maxOccurs="1" minOccurs="0"></xsd:element>
    </xsd:all>
 </xsd:complexType>
<xsd:complexType name="srcEventListType">
```

```
    <xsd:sequence>
      <xsd:element name="SRCEVENT" type="wo:srcEventType"
                              maxOccurs="unbounded" minOccurs="0"></xsd:element>
    </xsd:sequence>
  </xsd:complexType>


  <xsd:complexType name="attributes">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="attribute" type="wo:attribute" />
    </xsd:sequence>
  </xsd:complexType>


  <xsd:complexType name="assets">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="asset" type="wo:asset" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="attribute">
    <xsd:attribute name="id" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="value" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="asset">
    <xsd:attribute name="id" type="xsd:string" />
  </xsd:complexType>
</xsd:schema>
```

VDS_IOW-IN-ALERTS-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of IBM
 *
 * 5725-D69
 *
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 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/alertsType"
            xmlns:alert="http://vds.com/alertsType"
            xmlns:xsd="http://www.w3.org/2001/XMLSchema"
            elementFormDefault="qualified">
  <xsd:element name="operations">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element minOccurs="1" maxOccurs="unbounded" name="record" type="alert:recordType"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:complexType name="recordType">
    <xsd:annotation>
      <xsd:documentation>Event data source record</xsd:documentation>
    </xsd:annotation>
    <xsd:all>
      <!--
        * Minimal properties
```

```
*/
 -->
<xsd:element name="EXTEVENTID" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="MODEL_ID" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="STARTTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
<xsd:element name="LASTUPDATEDTS" type="xsd:dateTime" minOccurs="1" maxOccurs="1" />
<xsd:element name="SUBJECT" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="CATEGORY" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="EVENTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="CREATIONTYPE" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="NETWORK" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="DOMAIN" type="xsd:string" minOccurs="1" maxOccurs="1" />
<xsd:element name="STATUS" type="xsd:string" minOccurs="1" maxOccurs="1" />

<!--
     * Key/Full properties
     */
-->
<!-- Either of (EXTWORKEQUIPMENTID + EXTWORKEQUIPMENTTYPE) or LOCATION is required -->
<xsd:element name="ENDTS" type="xsd:dateTime" minOccurs="0" maxOccurs="1" />
<xsd:element name="EXTWORKEQUIPMENTID" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="EXTWORKEQUIPMENTTYPE" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="LOCATION" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="DESCRIPTION" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="ADDRESS" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="OWNER" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="CREATEDBY" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="URGENCY" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="CERTAINTY" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="ZONE" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="SEVERITY" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="ACK" type="xsd:string" minOccurs="0" maxOccurs="1" />
<xsd:element name="MEASURE" minOccurs="0" maxOccurs="1" >
  <xsd:annotation>
    <xsd:documentation>threshold attribute domain is 0,1 or 2</xsd:documentation>
  </xsd:annotation>
```

```
      <xsd:complexType>
        <xsd:attribute name="value" type="xsd:string" />
        <xsd:attribute name="unit" type="xsd:string" />
        <xsd:attribute name="type" type="xsd:string" />
        <xsd:attribute name="threshold_value" type="xsd:string" />
        <xsd:attribute name="threshold" type="xsd:string" />
      </xsd:complexType>
    </xsd:element>
  </xsd:all>
 </xsd:complexType>
</xsd:schema>
```

VDS_IOW-IN-ASSETS-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of IBM
 *
 * 5725-D69
 *
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 *
 * Per le versioni, release e modifiche fornite da IBM Corporation: Limitazioni previste per gli utenti
 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
 * con IBM Corporation.
 */

 V1.8
 -->
<xsd:schema targetNamespace="http://vds.com/assetTypes"
       xmlns:asset="http://vds.com/assetTypes"
       xmlns:xsd="http://www.w3.org/2001/XMLSchema"
       elementFormDefault="qualified">
  <xsd:complexType name="modelrefType">
    <xsd:annotation>
      <xsd:documentation>modelref will refer to the ID of the semantic
                         model for a multi tenant environment.
                         If the id attribute of modelref
                         is empty all the request will
                         executed played against the default
                         model. </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="request" type="asset:requestType" />
    </xsd:sequence>
    <xsd:attribute name="id" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="relationType">
```

```
<xsd:attribute name="relationName" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element maxOccurs="unbounded" minOccurs="1" name="relation" type="asset:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="3" name="threshold" type="asset:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="measureLabel" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="unbounded" name="measureType"
                        type="asset:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="attributeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
    <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
  </xsd:sequence>
    <xsd:attribute name="type" type="xsd:string" />
    <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
```

```xml
<xsd:complexType name="assetType">
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="1" name="internalLocation" type="xsd:string" />
    <xsd:element minOccurs="0" maxOccurs="1" name="relations" type="asset:relationsType" />
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attribute" type="asset:attributeType" />
    <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes" type="asset:measureTypesType" />
  </xsd:sequence>
  <xsd:attribute name="extWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="extWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="assetLabel" type="xsd:string" />
  <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="requestType">
  <xsd:annotation>
    <xsd:documentation>request is the actual operation that will be
                       executed. It captures the following informations :
                       request type :
                       CREATE / UPDATE / DELETE
                       - Assets data (
                       attributes, relations etc
                       ...)

                       the request type must be one of
                       the following :
                       - INSERT : create an asset.
                       - DELETE : delete an asset.
                       - UPDATE : update an asset
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element maxOccurs="unbounded" name="asset" type="asset:assetType" />
  </xsd:sequence>
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operation">
  <xsd:annotation>
```

```
      <xsd:documentation>operation is the root element of the xml file.

                          It will contain all the requests.

                          timestamp : xml file generation date.

      </xsd:documentation>

    </xsd:annotation>

    <xsd:complexType>

      <xsd:sequence>

        <xsd:element maxOccurs="unbounded" name="modelref" type="asset:modelrefType" />

      </xsd:sequence>

      <xsd:attribute name="timestamp" type="xsd:string" />

    </xsd:complexType>

  </xsd:element>

</xsd:schema>
```

VDS_IOW-IN-READINGS-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
/*
 * Licensed Materials - Property of IBM
 *
 * 5725-D69
 *
 * © Copyright International Business Machines Corporation 2012.
 *
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 * del Governo degli Stati Uniti - L'uso, la duplicazione o divulgazione sono limitati da GSA ADP Schedule Contract
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 */

 V1.8
-->
<xsd:schema targetNamespace="http://vds.com/readingsTypes"
       xmlns:readings="http://vds.com/readingsTypes" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
       elementFormDefault="qualified">
  <xsd:complexType name="readingValueType">
    <xsd:attribute name="value" type="xsd:string" />
    <xsd:attribute name="unit" type="xsd:string" />
    <xsd:attribute name="type" type="xsd:string" />
  </xsd:complexType>
  <xsd:complexType name="readingValuesType">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingValue" type="readings:readingValueType" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="workEquipmentType">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="0" name="description"    type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="unbounded" name="relations"
                                          type="readings:relationsType" />
```

```
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="attributes"
                                        type="readings:attributesType" />
      <xsd:element minOccurs="0" maxOccurs="1" name="measureTypes"
                                        type="readings:measureTypesType" />
    </xsd:sequence>
   <xsd:attribute name="location" type="xsd:string" />
   <xsd:attribute name="extType" type="xsd:string" />
   <xsd:attribute name="extId" type="xsd:string" />
   <xsd:attribute name="modelRef" type="xsd:string" />
   <xsd:attribute name="assetLabel" type="xsd:string" />
   <xsd:attribute name="assetDescription" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="readingSetType">
   <xsd:sequence>
      <xsd:element name="workEquipment" type="readings:workEquipmentType" />
      <xsd:element name="readingValues" type="readings:readingValuesType" />
   </xsd:sequence>
   <xsd:attribute name="extReadingSetid" type="xsd:string" />
   <xsd:attribute name="timestamp" type="xsd:string" />
   <xsd:attribute name="extRelatedEvtId" type="xsd:string" />
   <xsd:attribute name="extRelatedEvtType" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributeType">
   <xsd:sequence>
      <xsd:element minOccurs="0" maxOccurs="1" name="value" type="xsd:string" />
      <xsd:element minOccurs="0" maxOccurs="1" name="unit" type="xsd:string" />
   </xsd:sequence>
   <xsd:attribute name="type" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="attributesType">
   <xsd:sequence>
      <xsd:element name="attribute" type="readings:attributeType" />
   </xsd:sequence>
</xsd:complexType>
```

```xml
<xsd:complexType name="relationType">
  <xsd:attribute name="targetExtWorkEquipmentType" type="xsd:string" />
  <xsd:attribute name="targetExtWorkEquipmentId" type="xsd:string" />
  <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="relationsType">
  <xsd:sequence>
    <xsd:element name="relation" type="readings:relationType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="thresholdType">
  <xsd:attribute name="range" type="xsd:string" />
  <xsd:attribute name="level" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypeType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="3" name="threshold"
                         type="readings:thresholdType" />
  </xsd:sequence>
  <xsd:attribute name="unit" type="xsd:string" />
  <xsd:attribute name="name" type="xsd:string" />
  <xsd:attribute name="isPrimaryMeasurement" type="xsd:string" />
</xsd:complexType>
<xsd:complexType name="measureTypesType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="unbounded" name="measureType"
                                 type="readings:measureTypeType" />
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="readings">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" name="readingSet" type="readings:readingSetType" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
</xsd:schema>
```

VDS_IOW-IN-WO-CORE_1.7.XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
#
# Licensed Materials - Property of Veolia Environment-VE
#
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# disclosure restricted by Contract with Veolia Environment-VE
#
-->
<xsd:schema targetNamespace="http://vds.com/workOrdersType"
        xmlns:wo="http://vds.com/workOrdersType" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        elementFormDefault="qualified">
  <xsd:complexType name="requestType">
    <xsd:sequence>
      <xsd:element minOccurs="1" maxOccurs="unbounded" name="workorder">
        <xsd:complexType>
          <xsd:all>
            <xsd:element minOccurs="0" maxOccurs="1" name="DATASOURCEID" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="RECORDID" type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="WOEXTID" type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="MODEL_ID" type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="SUBJECT" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="DESCRIPTION" type="xsd:string" />
            <xsd:element minOccurs="1" maxOccurs="1" name="DOMAIN" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="CATEGORY" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="WORKORDERTYPE" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="WORKTYPE" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="SUBTYPE" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="FAILURE" type="xsd:string" />
            <xsd:element minOccurs="0" maxOccurs="1" name="PRIORITY" type="xsd:string" />
```

```
<xsd:element minOccurs="1" maxOccurs="1" name="STATUS" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="JOBPLAN" type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONDATE" type="xsd:dateTime" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATIONTYPE" type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="CREATEDBY" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETSTARTDATE" type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="TARGETENDDATE" type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTSTARTDATE" type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ACTENDDATE" type="xsd:dateTime" />
<xsd:element minOccurs="1" maxOccurs="1" name="LASTUPDATEDTS" type="xsd:dateTime" />
<xsd:element minOccurs="0" maxOccurs="1" name="ZONE" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCATION" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="EXTWORKEQUIPMENTID" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1"
                              name="EXTWORKEQUIPMENTTYPE" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="UPDATEDBY" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LEAD" type="xsd:string" />
<xsd:element minOccurs="1" maxOccurs="1" name="NETWORK" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="ADDRESS" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="PERFORMEDBY"
                              type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERID" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCOWNERDETAILS" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="LOCCONTACTID" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1"
                              name="LOCCONTACTDETAILS" type="xsd:string" />
<xsd:element minOccurs="0" maxOccurs="1" name="REPORT" type="xsd:string" />
<xsd:element name="SRCEVENTLIST" type="wo:srcEventListType"
                              maxOccurs="1" minOccurs="0">
        </xsd:element>
     </xsd:all>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
```

```
    <xsd:attribute name="type" type="xsd:string" />
</xsd:complexType>
<xsd:element name="operations">
   <xsd:complexType>
     <xsd:sequence>
       <xsd:element minOccurs="1" maxOccurs="unbounded" name="request" type="wo:requestType">
       </xsd:element>
     </xsd:sequence>
   </xsd:complexType>
</xsd:element>


<xsd:complexType name="srcEventType">
   <xsd:all>
     <xsd:element name="SRCEVTCATEGORY" maxOccurs="1" minOccurs="1" type="xsd:string">
     </xsd:element>


     <xsd:element name="SRCEVTTYPE" type="xsd:string" maxOccurs="1" minOccurs="1">
       <xsd:annotation>
         <xsd:documentation>
            For a SRCEVTCATEGORY = ALERT or EVENT, this is
            the IOW EVENTTYPE For a SRCEVTCATEGORY =
            WORKORDER, this is the IOW
            WORKORDER DOMAIN For a SRCEVTCATEGORY = NOREADING or
            READINGTHRESHOLD, this is the IOW MEASUREMENTTYPE
         </xsd:documentation>
       </xsd:annotation>
     </xsd:element>
     <xsd:element name="SRCEVTID" type="xsd:string" maxOccurs="1" minOccurs="0">
       <xsd:annotation>
         <xsd:documentation>
                 For a SRCEVTCATEGORY = ALERT or EVENT, this is
                 the IOW EXTEVENTID For a SRCEVTCATEGORY =  WORKORDER, this is the
                 IOW WOEXTID For a  SRCEVTCATEGORY = NOREADING or READINGTHRESHOLD,
                 this is the IOW MEASUREMENT_ID (only for WO OUT)
```

```
            </xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="SRCEVTDATE" type="xsd:dateTime" maxOccurs="1" minOccurs="1">
        </xsd:element>
        <xsd:element name="SRCEVTORIGVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
        </xsd:element>
        <xsd:element name="SRCEVTCURRVALUE" type="xsd:string" maxOccurs="1" minOccurs="0">
        </xsd:element>


        <xsd:element name="SRCEVTCURRVALUETS" type="xsd:dateTime"
                        maxOccurs="1" minOccurs="0"> </xsd:element>
        <xsd:element name="SRCEVTCOMMENT" type="xsd:string"
                        maxOccurs="1" minOccurs="0"> </xsd:element>
        <xsd:element name="SOPREFERENCE" type="xsd:string"
                        maxOccurs="1" minOccurs="0"> </xsd:element>
      </xsd:all>
    </xsd:complexType>
    <xsd:complexType name="srcEventListType">
      <xsd:sequence>
        <xsd:element name="SRCEVENT" type="wo:srcEventType"
                        maxOccurs="unbounded" minOccurs="0"> </xsd:element>
      </xsd:sequence>
    </xsd:complexType>
</xsd:schema>
```

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