

Vic/Tas Maximo User Group 18th November 2019

South East Water

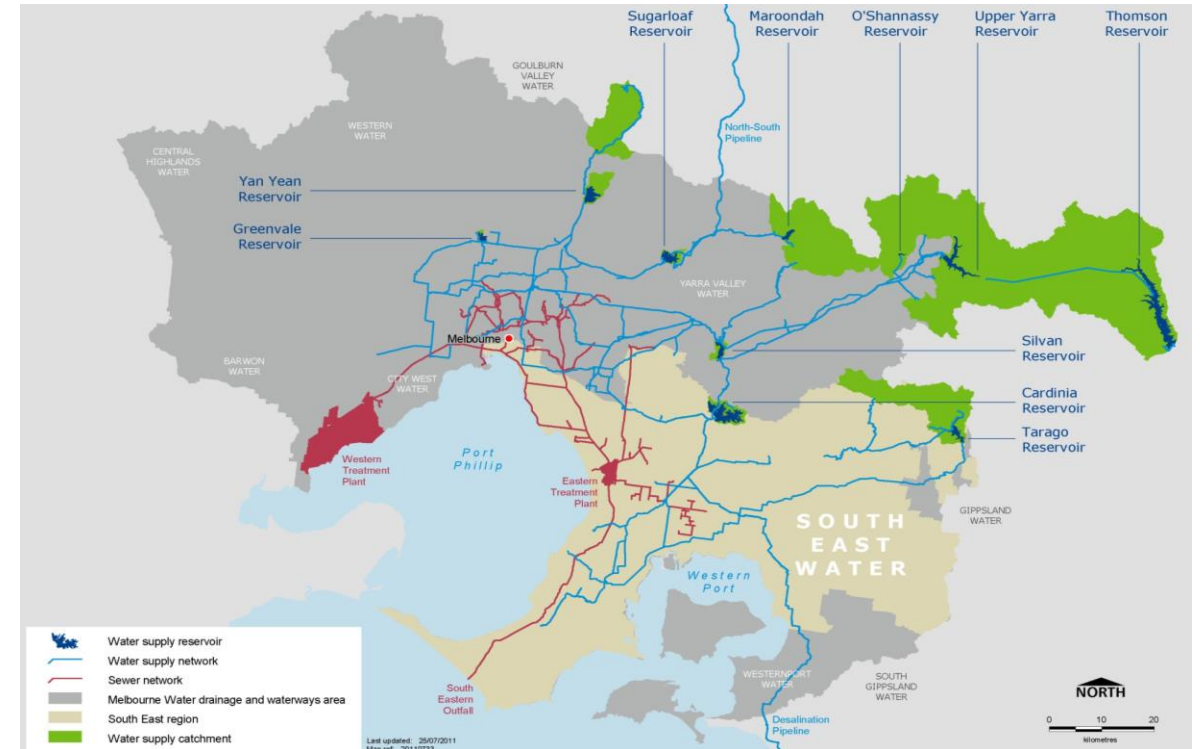
Agenda

- South East Water Overview
- Our Assets
- Current challenges and opportunities
- Asset Information Strategy
- Asset Register System Context
- Implementation Plan
- Journey so far
- Learnings and next steps

South East Water Overview

South East Water is one of Melbourne's three state-owned metropolitan water retailers. We provide water, sewerage and recycled water services to 1.83 million people in the south east of Melbourne.

Our vision: We're creating a better world for our customers with forward thinking water solutions, for all and always, that won't cost the earth





Who
we are

We deliver water, sewerage and
recycled water
services

1.83
million people

3,640 square
kilometre
service area

352
pump stations

25,000+
kilometre
pipeline



\$4.4 billion
assets



8
water
recycling
plants



Current Challenges and Opportunities

- Asset data is spread across many repositories - hard to maintain a catalogue of what data exists and where it is and what it means.
- Real time integration between AM applications is often hard to achieve, but required to analyse and exploit real time data flows.
- Digital Utility transition – significant volume of new types of assets, data, and relationships.
- More assets on customer property and interaction with customer assets - more integration with CRM and third party AMS.
- Need to support BIM and other evolving information standards and growing suite of visualisation tools.

Asset Information Strategy

- A unified Asset Register is a key element of SEW Business Information Strategy - used in conjunction with the Customer, Supplier, Employee and other registers to support all business operations.
- Each Register is both an information repository and a framework for organising and interpreting information stored outside the Register.
- South Water chose Maximo as the foundation of the SEW Asset Register, storing core asset data, attributes and relationships. Other Maximo modules may be considered down the track.
- In cooperation with the SCADA system, Work Management System, GIS, Document Management System and others, the Asset Register will support all of South East Water's Asset Management and activities.

Asset Definition and Portfolio Scope

Assets are the items such as pipes, valves, pumps and sensors installed throughout South East Water's region that collectively deliver the FUNCTIONS needed to provide primary SERVICES.

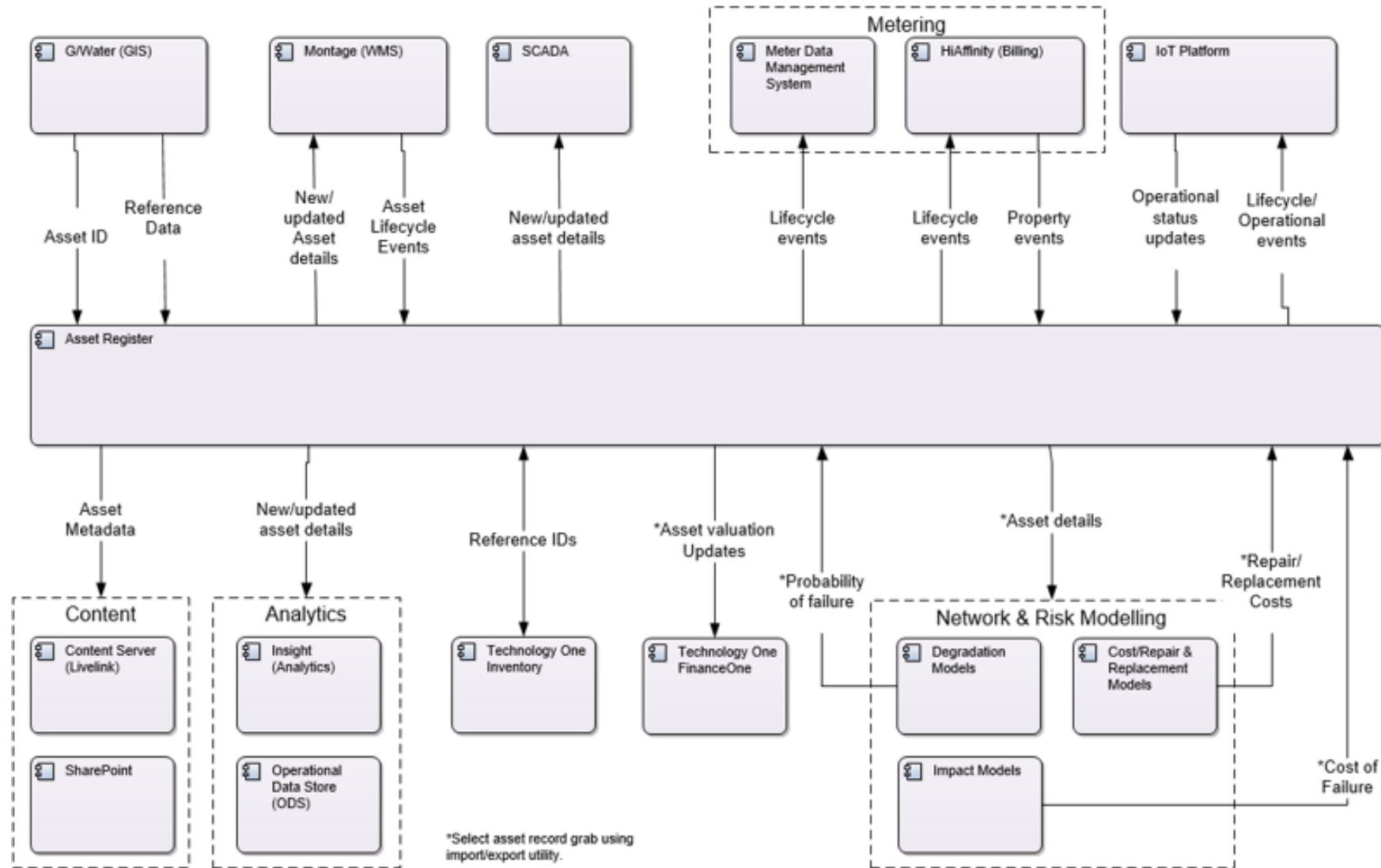
Assets to be included in the register are those directly involved in the delivery of primary services:

- All assets connected to the Water, Wastewater, Recycled Water networks, Integrated Water and Wastewater Treatment facilities
- Meters (digital and traditional)
- Sensors
- Telemetry

Implementation Approach

- Phase 1 – Foundation layer and Billing meters (digital and mechanical)
- Phase 2 – On property assets, e.g. integrated water and pressure sewer)
- Phase 3 – Linear and facility based assets

Asset Register System Context



Journey so far

- Configured baseline Maximo objects
 - Service Address
 - Location
 - Asset
 - Event
- Developed Class specifications (phase 1)
- Developed Location hierarchy (phase 1)
- Functional integration design (phase 1)

Learnings and Next Steps

- Progress has been slower than anticipated.
 - Some metering processes are complex and manual.
 - Change management has been a challenge.
 - Metering processes affect most areas of the business, including customer contact, billing, network operations and planned IOT solutions.
- Take smaller bites but stay true to overall strategy.
- Get key business process changes agreed before finalising costs and schedules.

*healthy
water
for life*

SEW Asset Register Purpose

- Alongside other registers (Customer, Supplier, etc) represents a key element of SEW business information architecture
- In cooperation with other systems including GIS, SCADA, WMS, DM, A&R the Asset Register supports most asset related activities, including:
 - Cost and value assessment of network extension and facility upgrade options.
 - Modelling of network and facility performance.
 - Analysis of actual asset and facility performance.
 - Planning of response to fault reports and alarms.
 - Capture of installation, inspection, failure and repair information.
 - Analysis of performance of maintenance and inspection programs.
 - Maintaining risk data to guide investment and measure organisational performance.
 - Forecast future asset opex and capex costs for existing asset base.

Asset Register Solution Business Goal

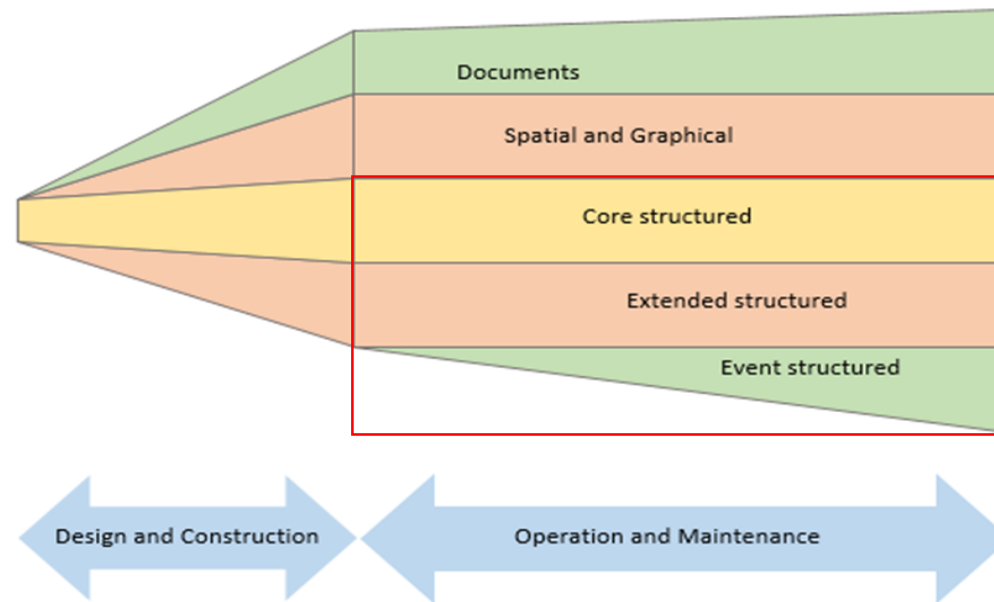
Goal is better decisions sooner and delivery of new, cheaper and more reliable services.

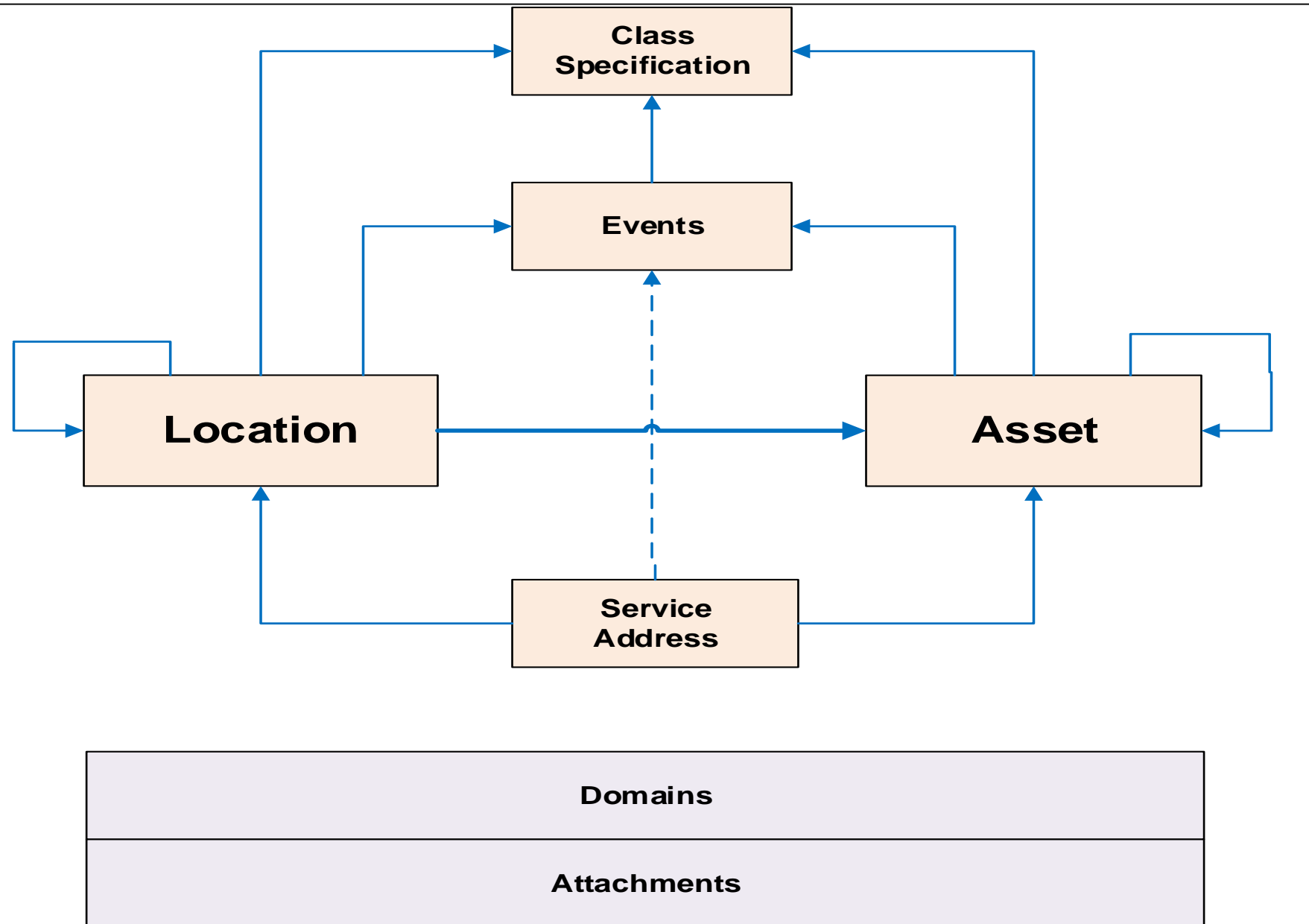
- Improved ability to monitor and optimize asset management plans and systems through better visibility of future service quality, risk, opex and capex.
- Improved service levels through better allocation of capital and opex supported by better forecasts and risk information.
- Reduced Total Cost of Ownership through better option analysis supported by better information about expected remaining useful life and operating and replacement costs.
- Reduced opex cost through better design of inspection and maintenance programs supported by improved availability of information about maintenance programs.
- Improved service quality reduced capex through optimization of spares holding by linking asset register and inventory management.

Asset Data Scope

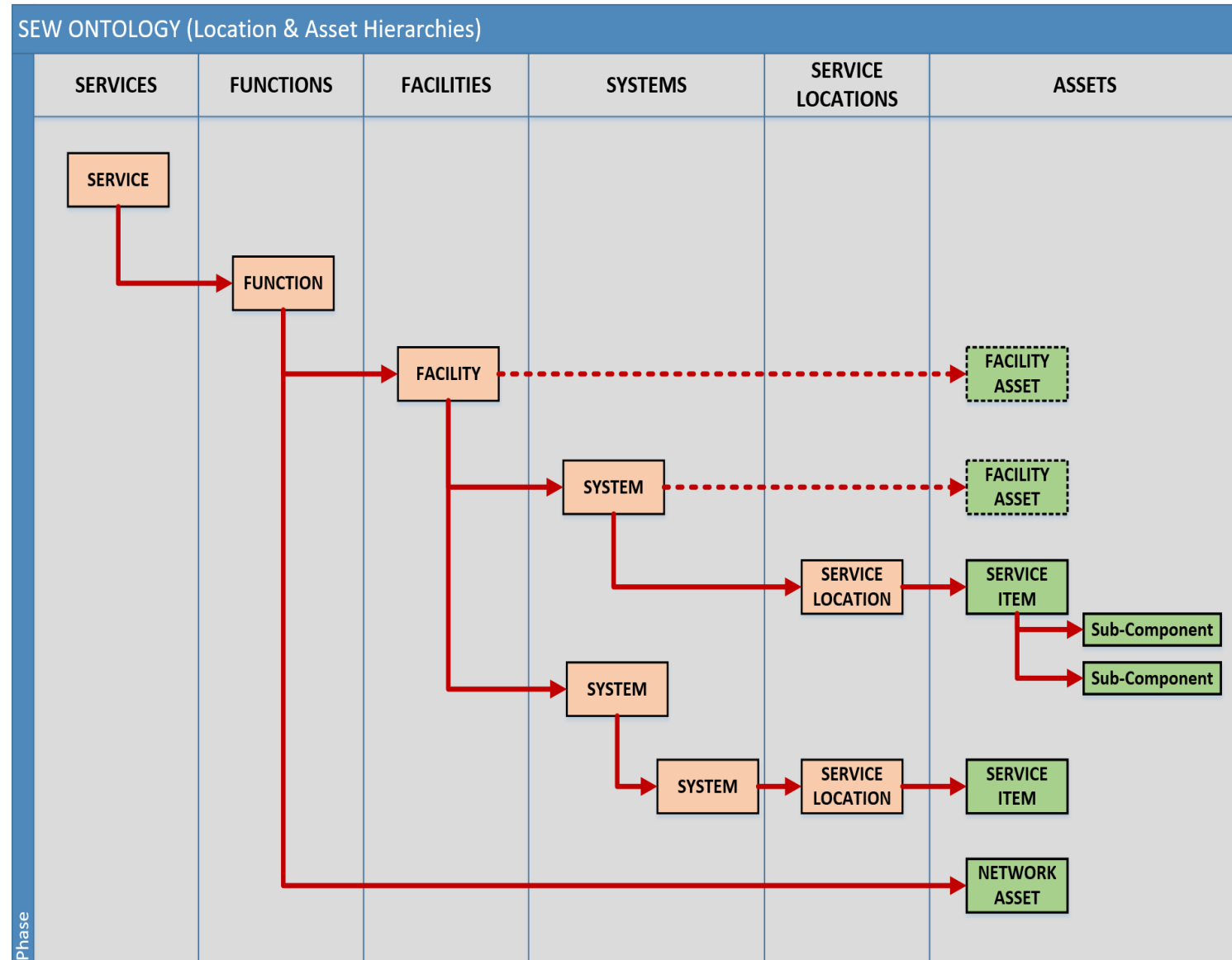
In scope data includes Core Structured (data common to all assets such as ID, type, risk, etc) and Extended Structured data (common to all assets of a particular type such as diameter, operating voltage, etc) as depicted below

Asset Register will support the viewing of unstructured data (such as plans, photos, service manuals, etc) but the register will only hold metadata for the unstructured data types.





Asset Hierarchy



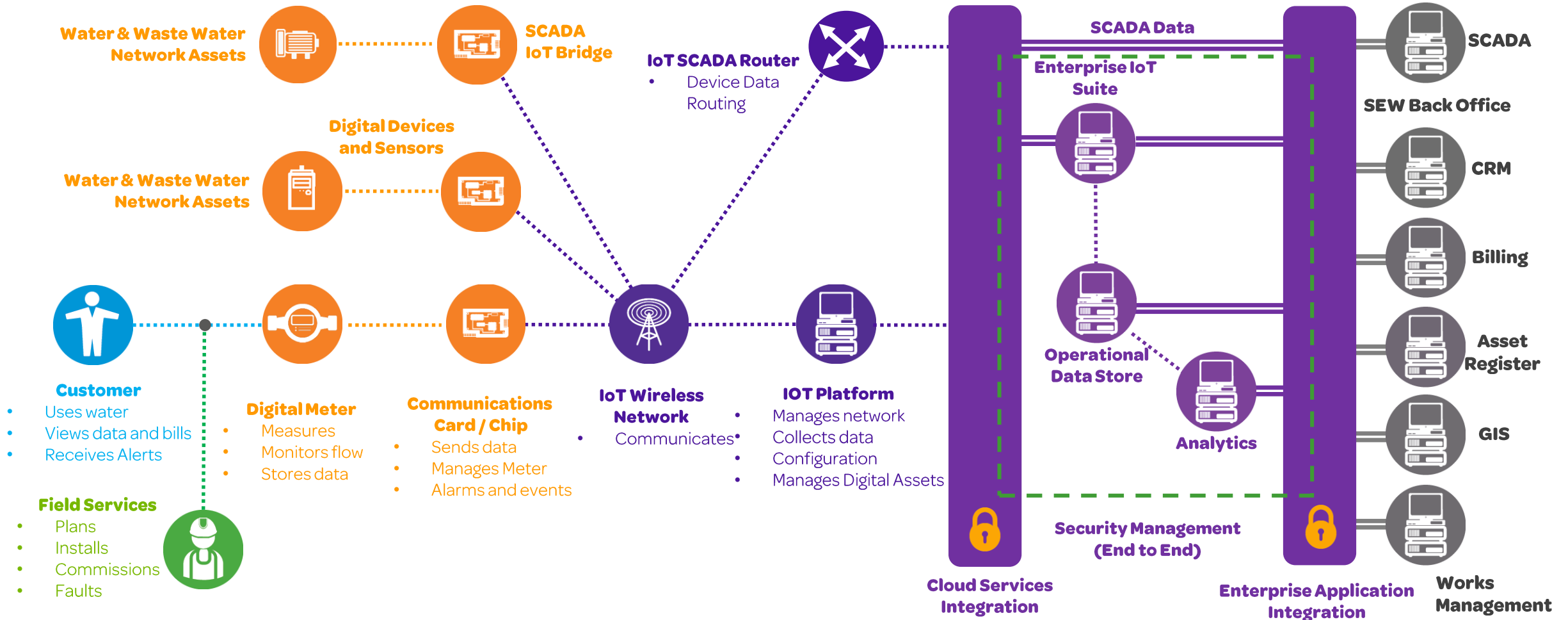
LOCATION HIERARCHY/ONTOLOGY

Phase 1

Phase 2

	Service	Function	Facility	System	Service Location	Asset
Phase 1	SERVICE Drinking Water	FUNCTION DW Meter			"Property" Service Address	METER
	SERVICE Recycled Water	FUNCTION RW Meter			"Property" Service Address	METER
Phase 2	SERVICE Wastewater collection	Pressure Sewer FUNCTION	PSS Facility - PSSnnnnn Service Address FACILITY		Eg Controller (NON-FIXED) "Position"	ASSET Eg OneBox (NON-FIXED)
					"Position" Eg PSS Pump (NON-FIXED)	ASSET eOne/Extreme/KM597856 (NON-FIXED)
						ASSET Eg Boundary kit (FIXED)
						ASSET Eg Pump kit (FIXED)
Phase 2	SERVICE Integrated Water Management rainwater to hot	Eg - Alternative Water Plumbing FUNCTION	IWS Facility Service Address FACILITY	Storage	Eg Rainwater tank pump; Hot Water Unit (NON-FIXED) "Position"	ASSET
					Eg Rainwater tank (FIXED)	ASSET
				Treatment	"Position" Eg UV unit; Temp probe (NON-FIXED)	ASSET
						ASSET (FIXED ASSETS)

Digital Information Platform



Intelligent Devices, Monitoring, Sensing & Control



OneBox

We have thousands of battery powered, cellular (3G) M2M devices.....



Battery Valve Actuators

to reach our Digital Utility goals, we need many thousands more devices and sensors at the right price point...

730,000 - 800,000 Meters, 20,000+ OneBox, Non-Critical SCADA, anywhere, anytime, on battery, any asset



BlockAid

Require an asset register to be the master of this data



Digital Meters