

BIM – (GEO-) ICT TRENDS

Enabling new applications fields



Intro

- Rombout Verwimp
 - Geo Solutions
 - Managing partner
 - > 60 consultants – location & IT
 - 15 years expertise
 - Several continents
 - Focus
 - Business alignment of spatial solutions



Location
is
everywhere





Data



**Technology
& Tools**



People

Open data

Standards

Your data

Concepts

Commercial data

Models



Data

BI

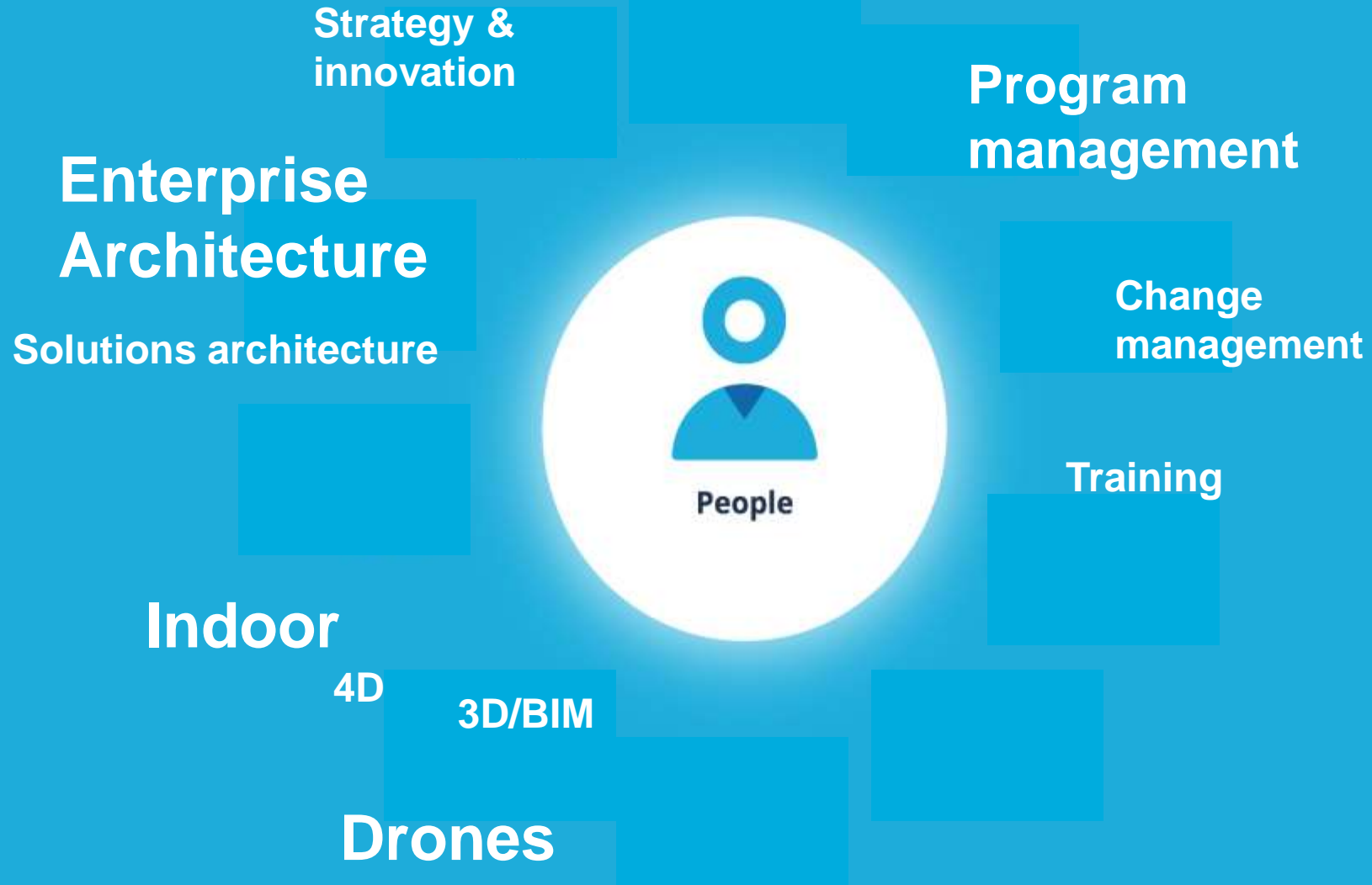
GIS Tools

BIG data

Out of the box
Tailor made



Sharing
Publishing
Portal
Cloud/mobile







INDOOR MAPS, WAYFINDING & NAVIGATION

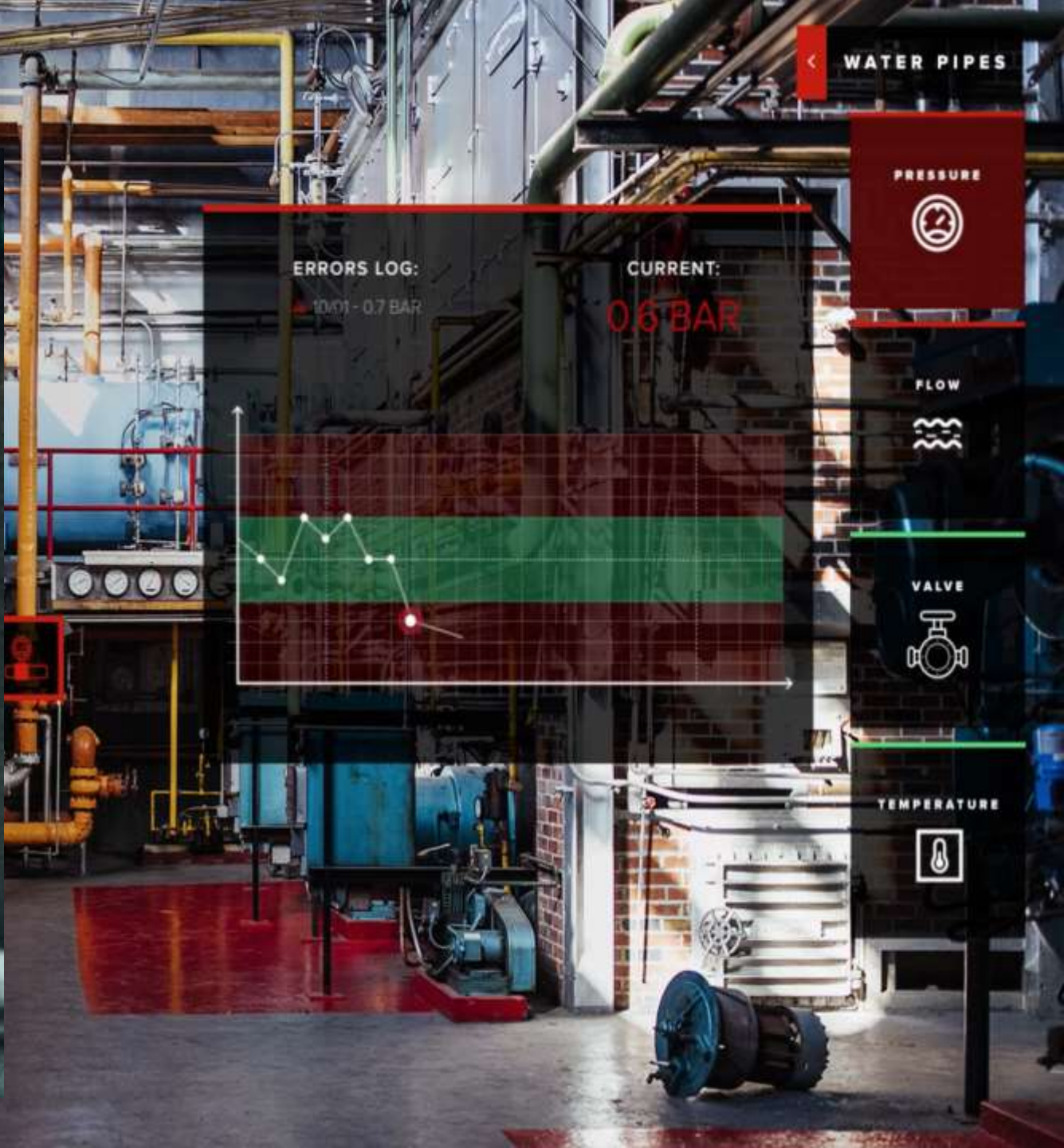


Indoor wayfinding

Ideal for several industries



MAINTENANCE & AUGMENTED REALITY



← WATER PIPES

PRESSURE



ERRORS LOG:

10/01 - 0.7 BAR

CURRENT:

0.6 BAR

FLOW



VALVE



TEMPERATURE



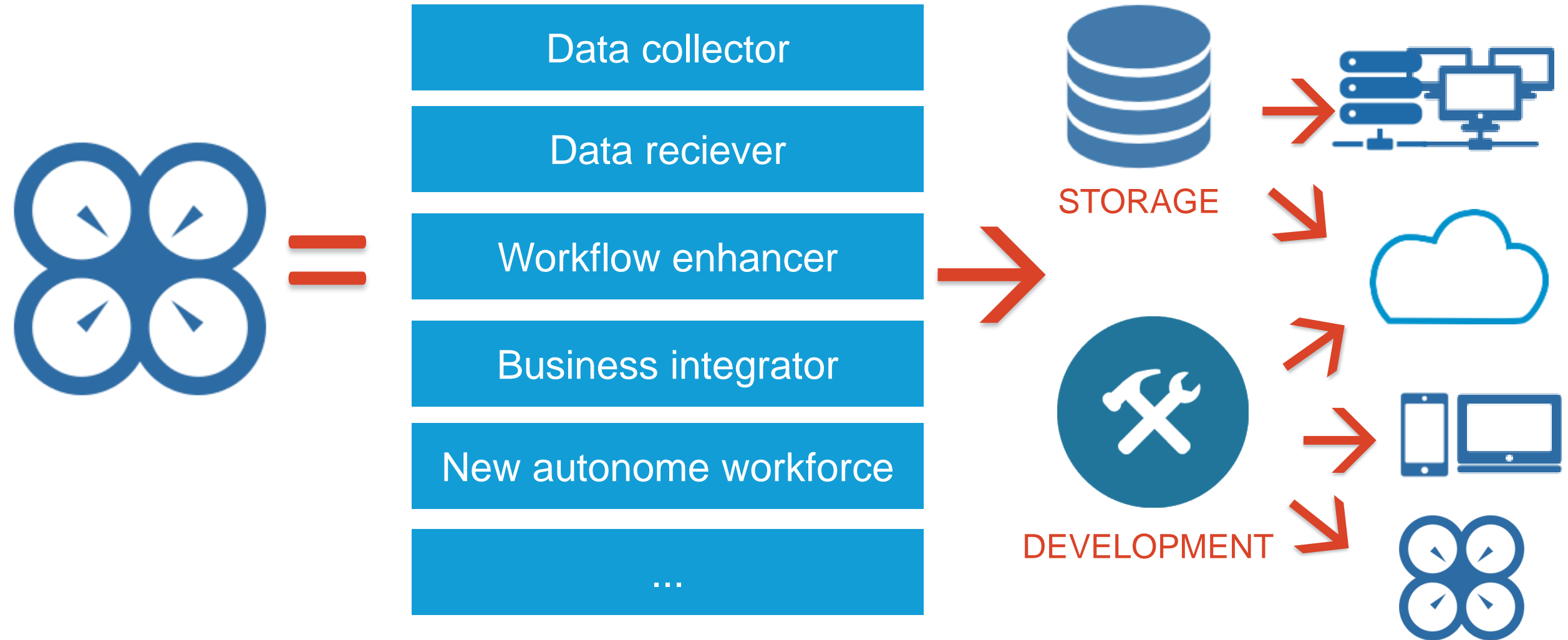
SMART CITIES



ROBOTICS



DRONES data processing





3D MAPPING

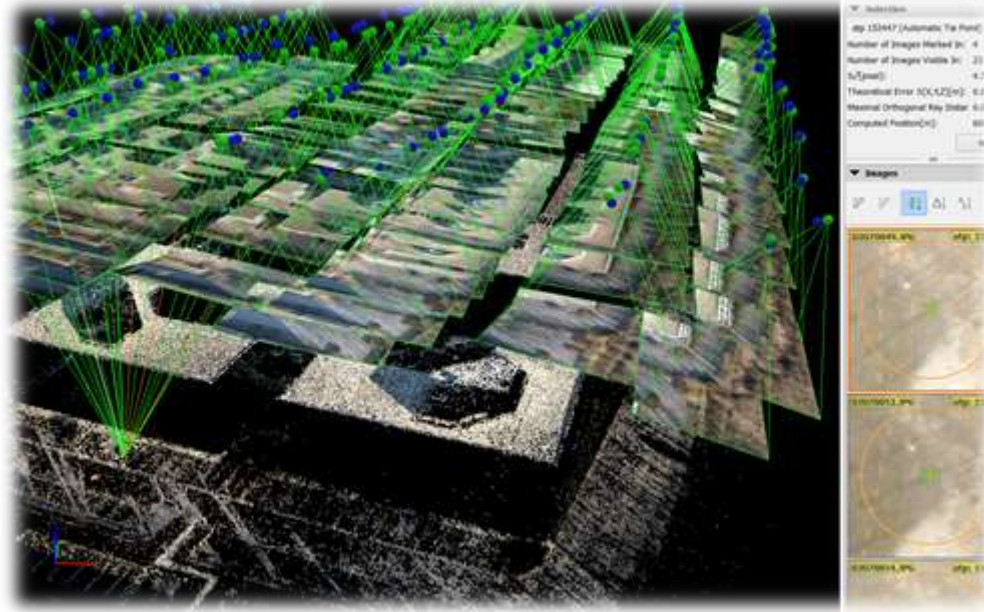
3D MODELLING





3D MAPPING

HOW? PHOTOGRAMMETRY → overlapping RGB images





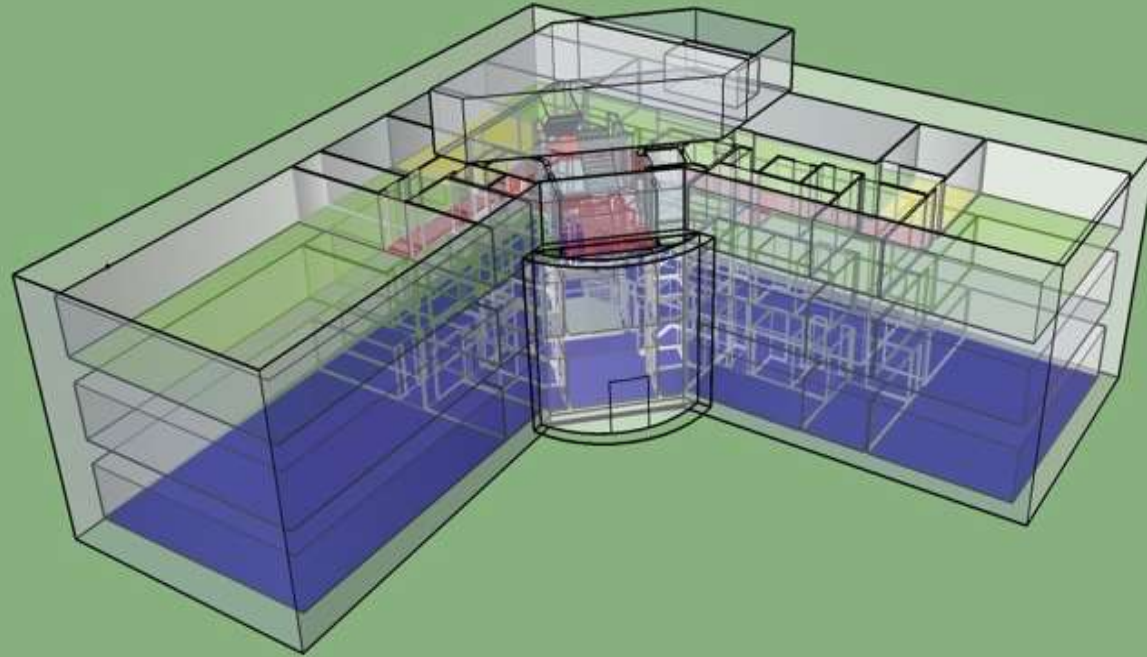
3D MAPPING

INDOOR

OGC standards:

CityGML

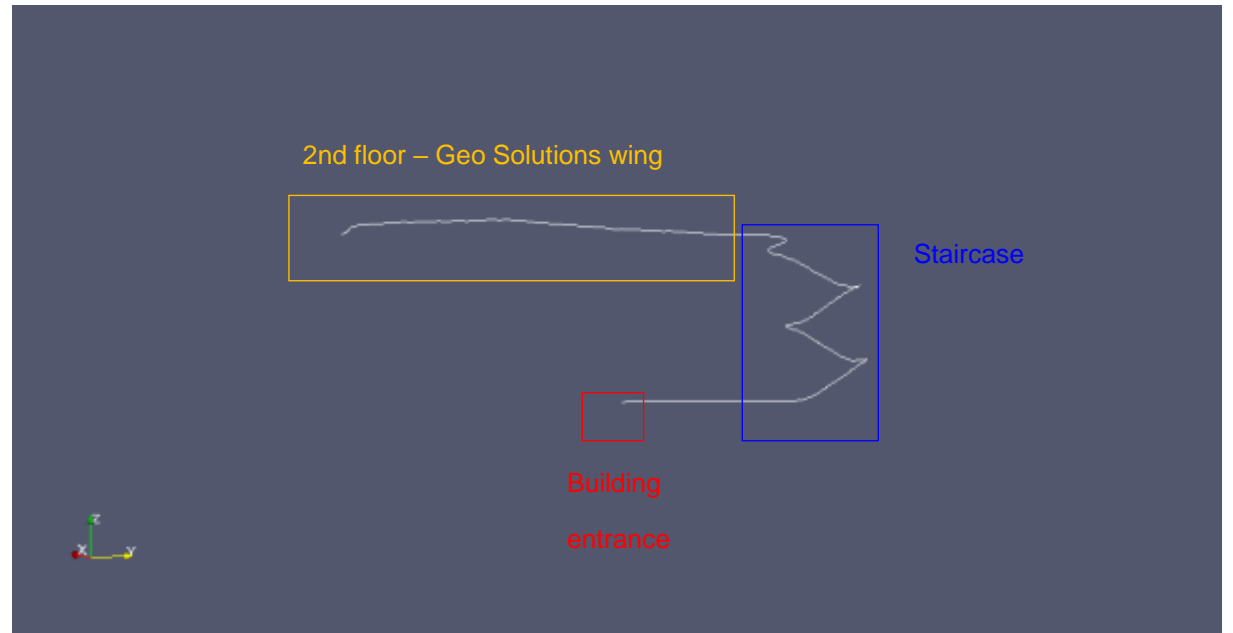
INDOORGML

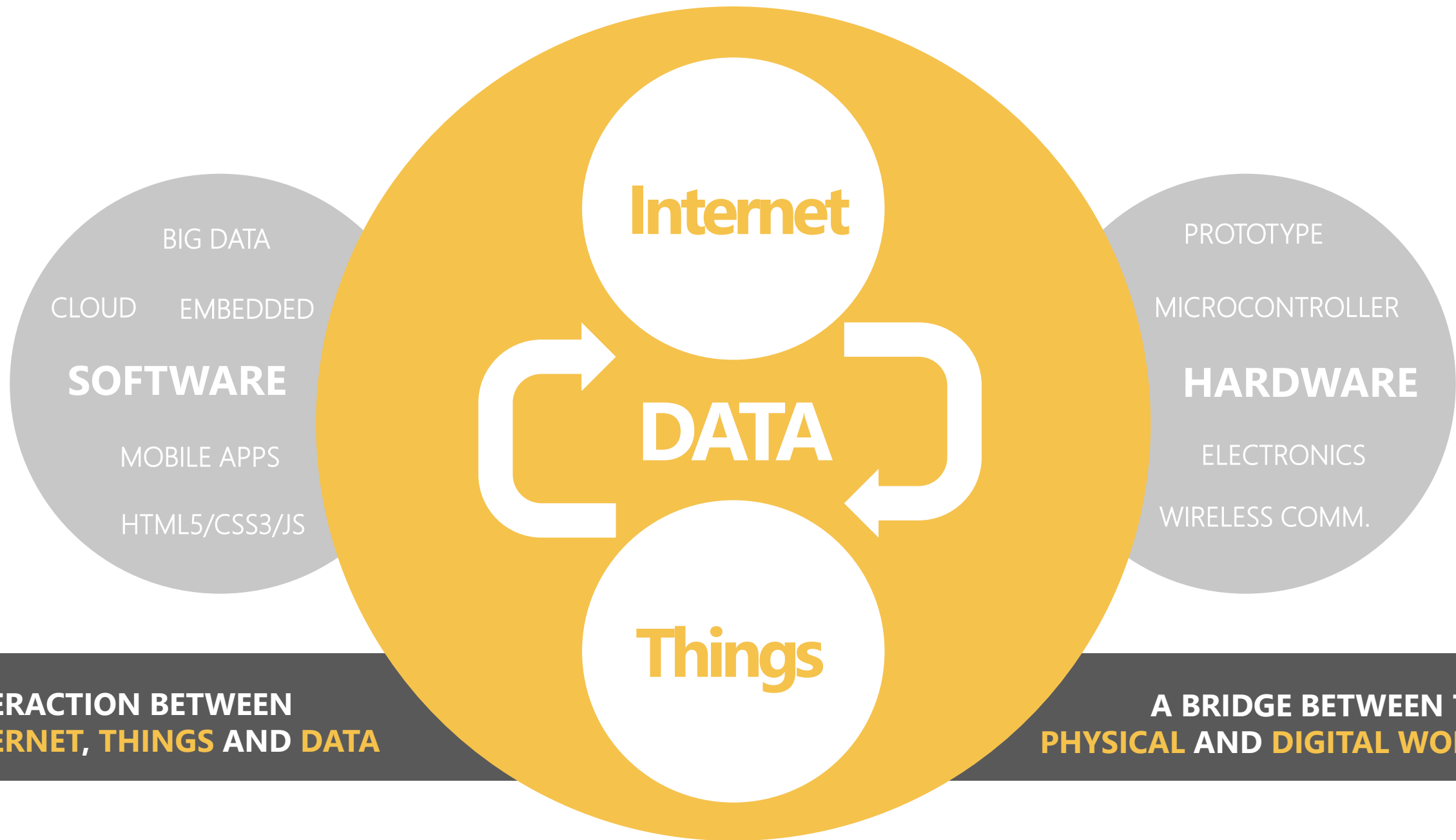




3D MAPPING

INDOOR: 3D scanning+ tracking

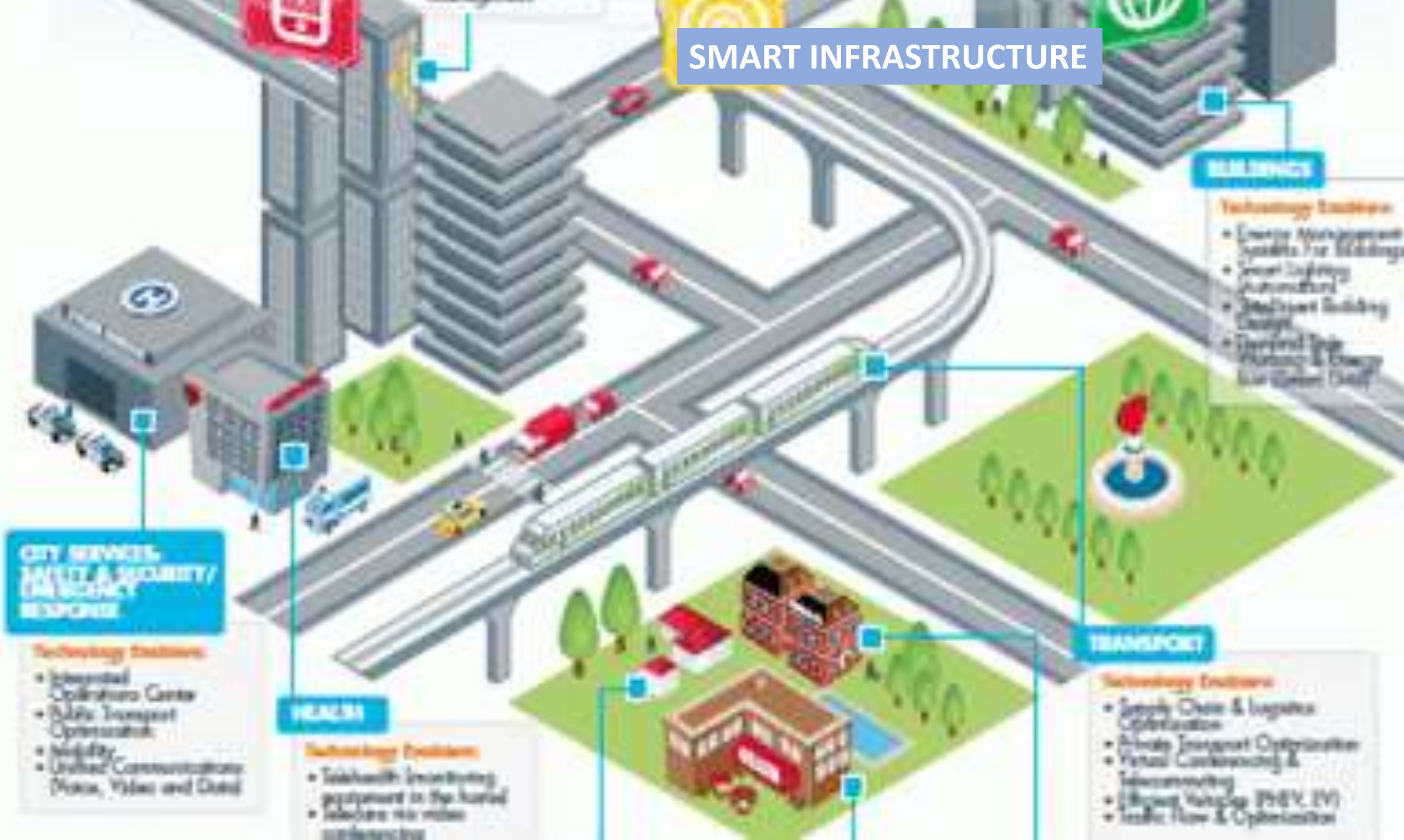




**INTERACTION BETWEEN
INTERNET, THINGS AND DATA**

**A BRIDGE BETWEEN THE
PHYSICAL AND DIGITAL WORLD**

SMART INFRASTRUCTURE



CITY SERVICES, SAFETY & SECURITY / EMERGENCY RESPONSE

- Technology Enablers:**
- Intelligent Operations Centre
 - Public Transport Optimisation
 - Mobility
 - Unified Communications (Voice, Video and Data)

URBAN

- Technology Enablers:**
- Telehealth (Integrating equipment in the cloud)
 - Sensors (for more applications)

TRANSPORT

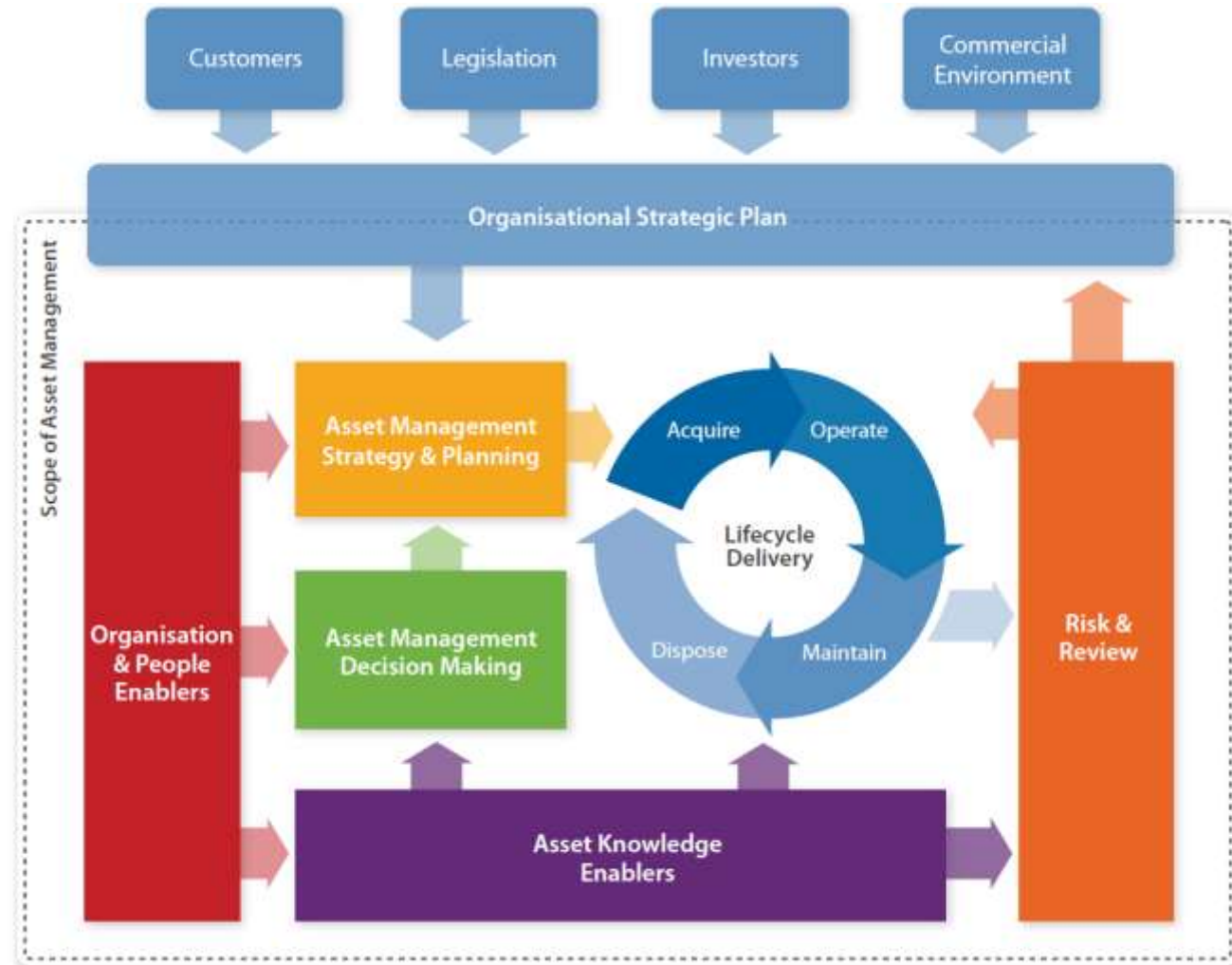
- Technology Enablers:**
- Supply Chain & Logistics Optimization
 - Private Internet Optimization
 - Virtual Conferencing & Teleconferencing
 - Efficient Vehicles (PHEV, EV)
 - Traffic Flow & Optimization

BUILDINGS

- Technology Enablers:**
- Energy Management Systems For Buildings
 - Smart Lighting Automation
 - Intelligent Building Design
 - Efficient Use of Water & Energy (Waterless Urinals)

Smart Asset Management

- AS IS:
 - *diverse 'geo' landscape with competing master systems*
- TO BE:
 - *an integrated, proces-driven out of the box asset management*
- Goals:
 - *ISO55000 asset management*
 - *single registration, multiple use*
 - *foundation for 15 years*



IT architecture

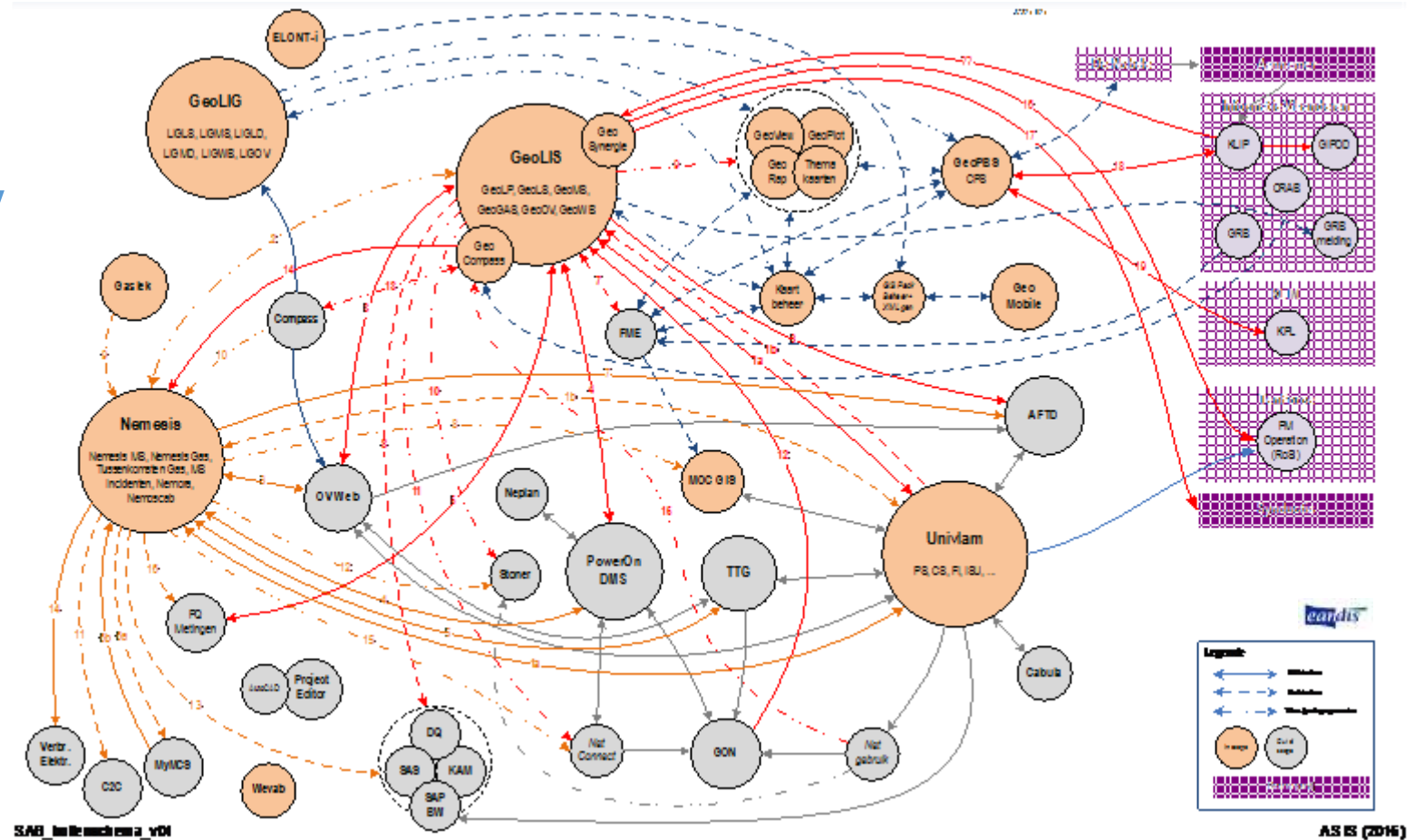
in transition...

custom built > **proprietary**

custom integration > **EAI**

desktop > **mobile**

on-premise > **cloud**



**MORE
(complex)
BIM
APPLICATIONS**

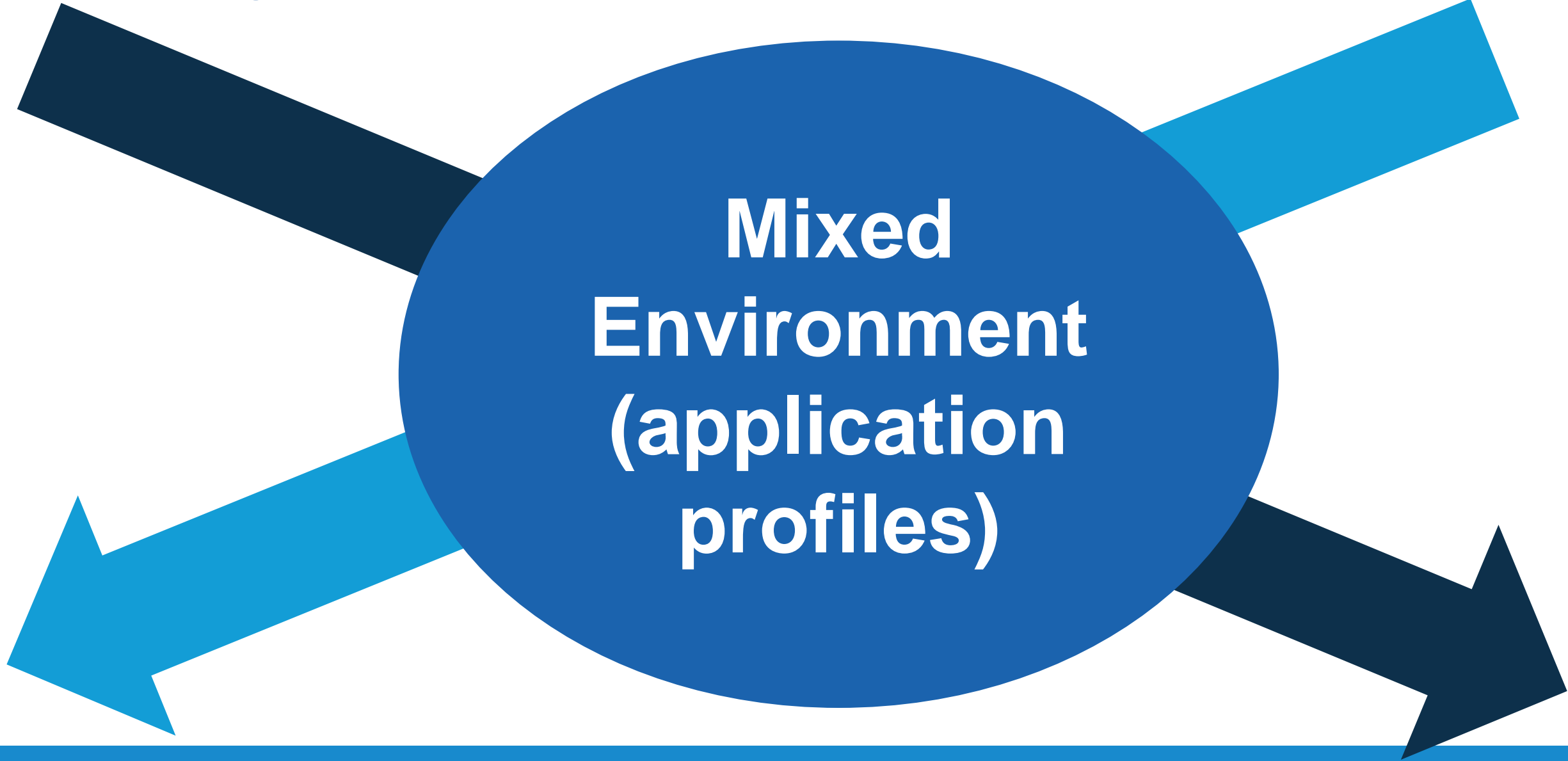


**LOD
decreasing**



BIM L5

LOD 0



Recomendations

- Standards should allow for diverse data quality
- Software tools and solutions need to:
 - *Have an open architecture to interact with many systems*
 - *Allow for diverse data quality*



Questions?



Thank you for your attention!

