

# Digital Asset Visualisation and the opportunity to apply Data Science

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**Anthony Roe**

**Downer Mining Energy  
and Industrial**

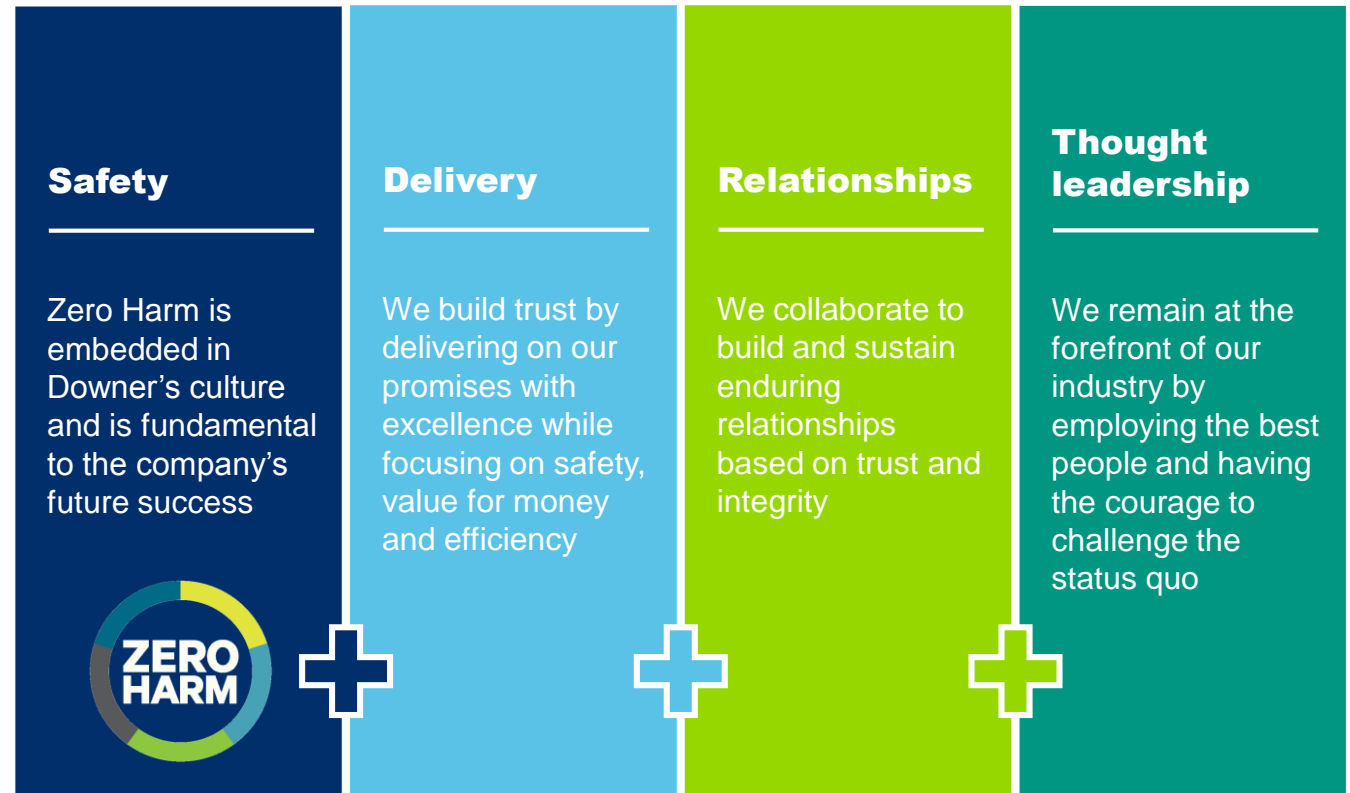
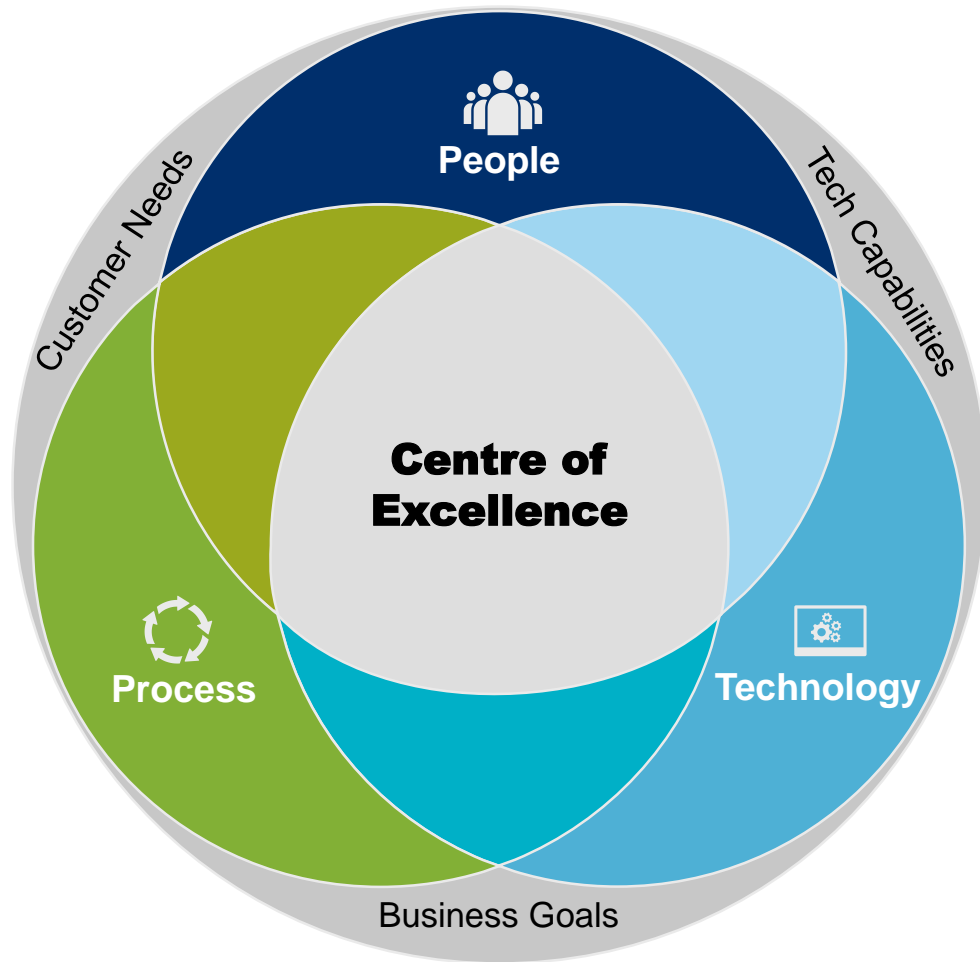


# Agenda

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1. The digital mission
2. The ecosystem
3. The discipline needed to operationalize successful innovations
4. DAVI and The Data Scientists

# The digital mission! ( Is all about Cultural Alignment)



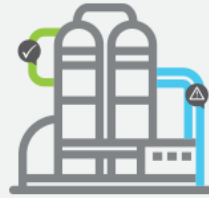
# MEI Digital Technology & Innovation

**Current portfolio of mega-trends in the acceleration program.**



## **Mobile Industrial Software Applications**

to streamline access of information and improve business operations.



## **Evolution of BIM**

to deliver a Digital Asset Visualisation & Information (DAVI) system.



## **Data Science Artificial Intelligence**

to gain insights and automate actions for asset maintenance and optimum performance.



## **UAV Systems**

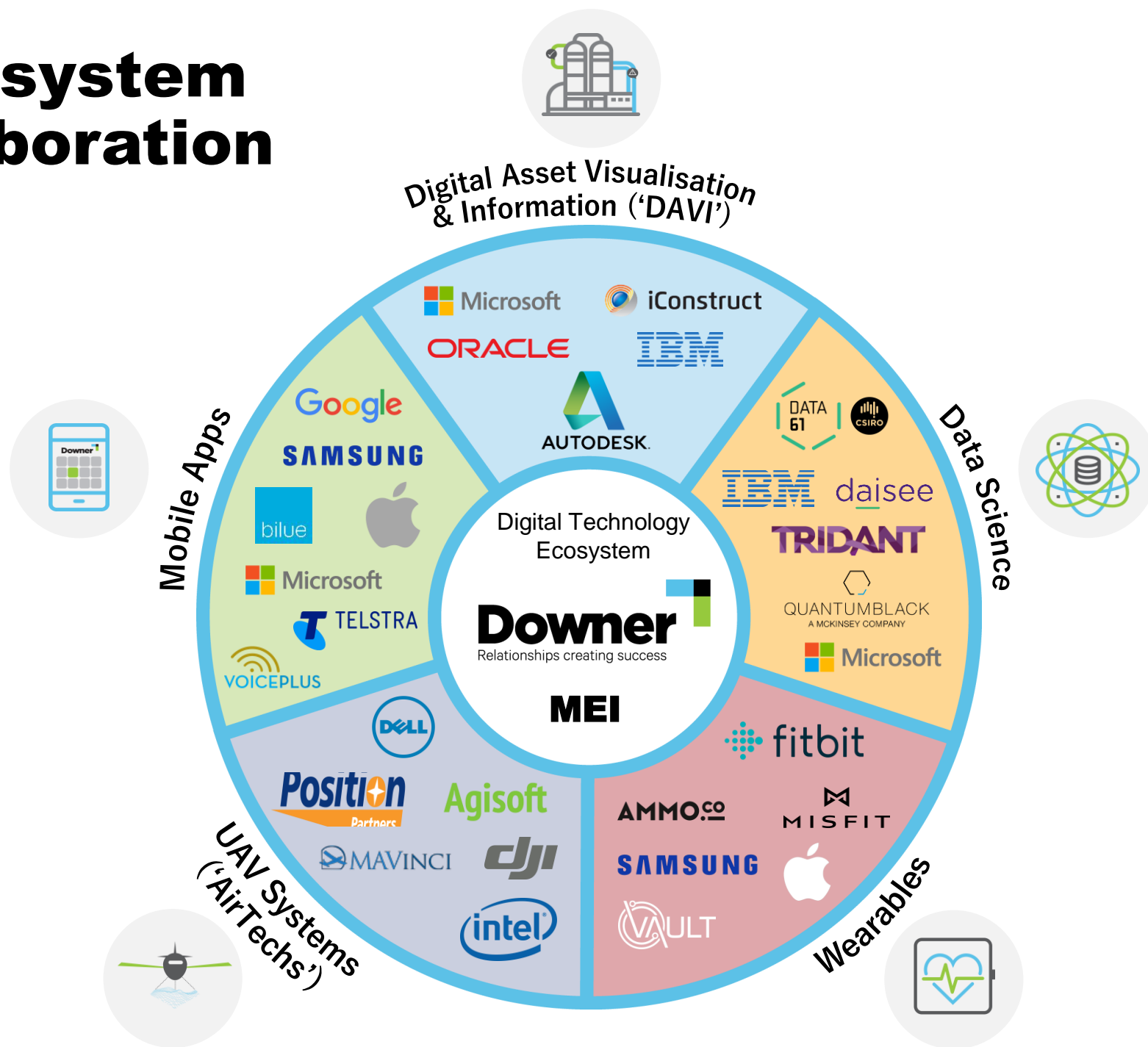
to improve survey operations and capabilities utilising autonomous fixed-wing and multirotor drones.



## **Wearables**

to capture data and generate insights that better prevent workplace safety incidents.

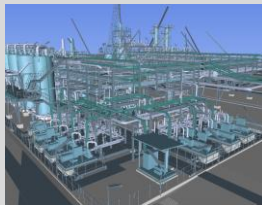
# The ecosystem of Collaboration



# Digital Technology Topography



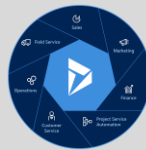
## DAVI (Asset Visualisation)



3D  
4D  
xD



## Systems of Engagement



## Systems of Intelligence



## Systems of Record

EAM

JDE

Payroll

HCM

ITSM

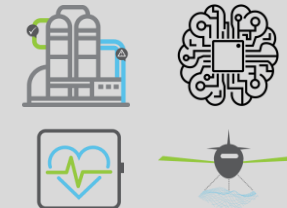
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## Insights



## Digital Assets




## Dynamic Data




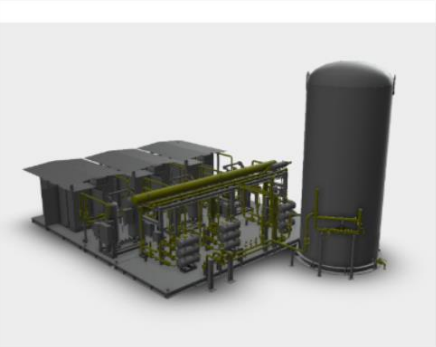
# MEI Digital Technology & Innovation

## Digital Asset Visualisation and Information (DAVI) methodology

 iWorkpack ⚙️ 👤


☐ Show archived






0005 - Small Plant


Users	8	Local	no	Revision	1
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 SEP 07 2018



Orbest Gas Plant - Orbest Gas Plant

Users	2	Local	no	Revision	1
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 SEP 12 2018

# DAVI Lifecycle

## 3. ASSET SUSTAINMENT

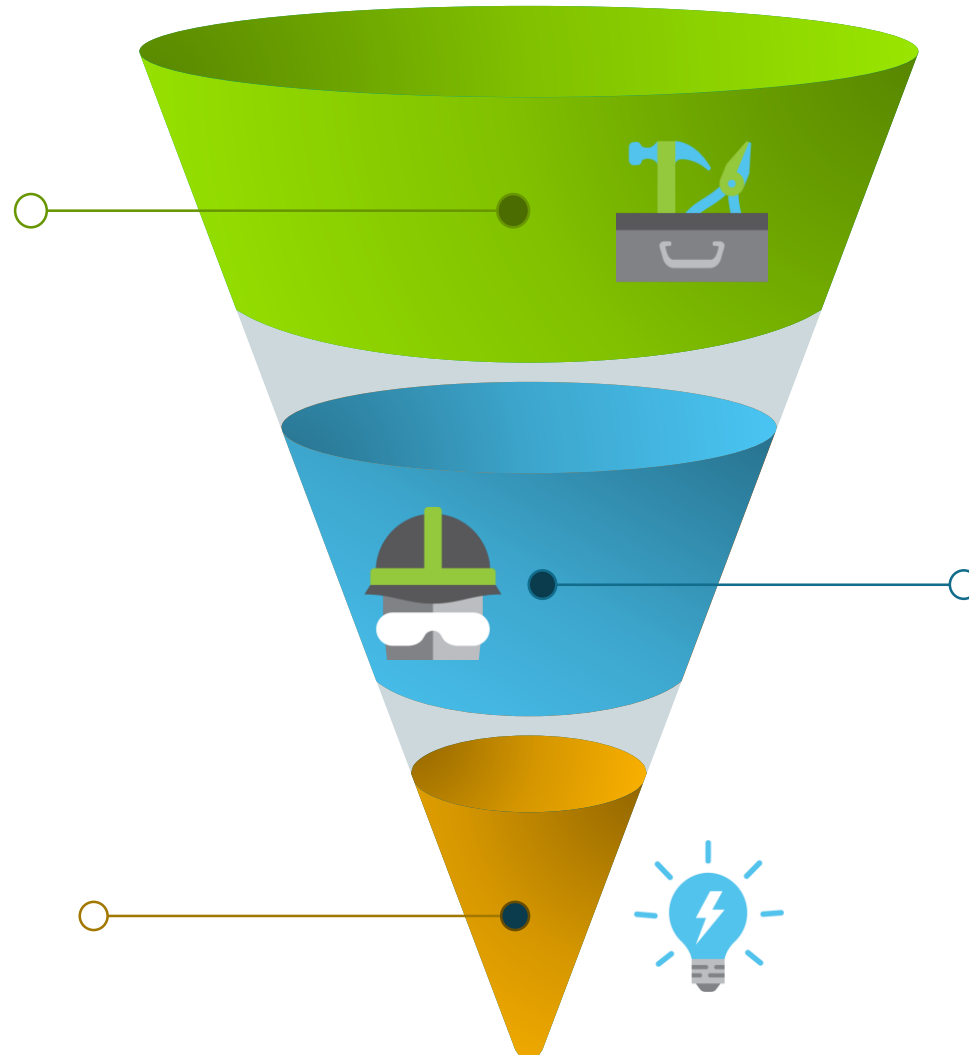
*Operation and maintenance of assets (LOD 500)*

Achieved using advanced 3D visualisation of asset information, automated anomaly identification, work order management and optimisation of asset management strategy.

## 1. ENGINEERING

*Engineering of project and assets (LOD 100)*

Achieved using advanced 3D visualisation of asset information and clash detection.



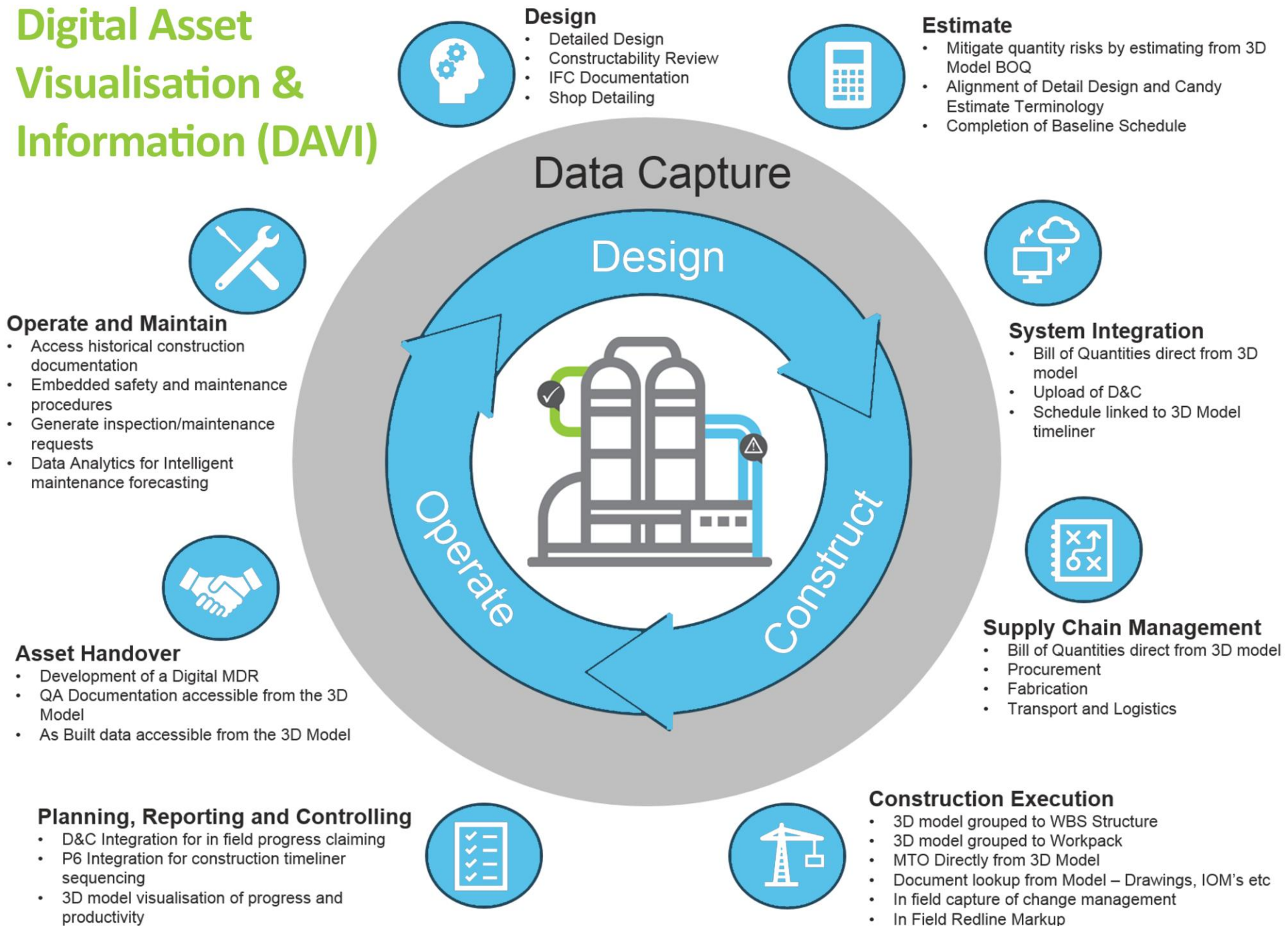
## 2. CONSTRUCTION

*Construction of project and assets (LOD 300)*

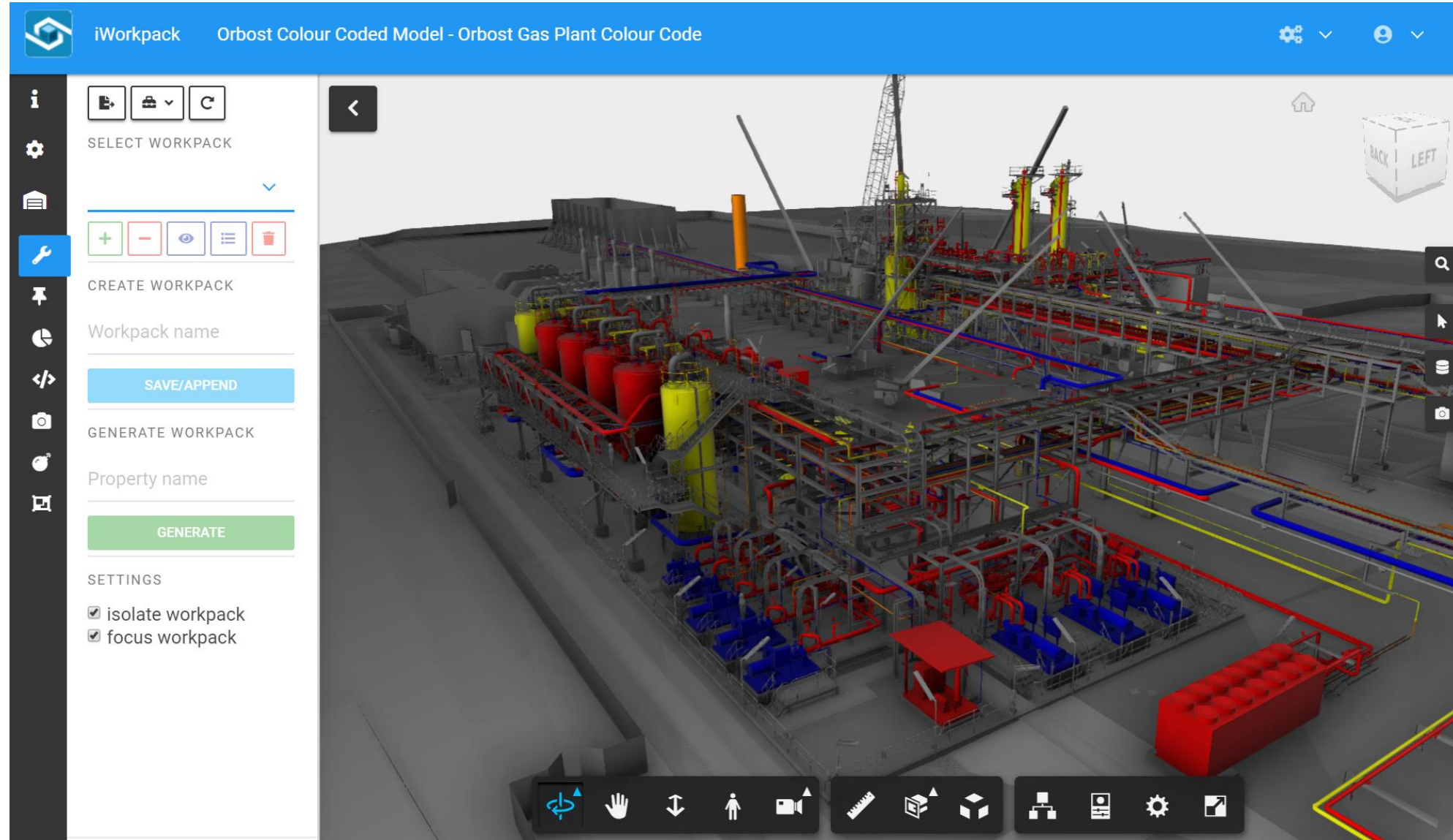
Achieved using advanced 3D visualisation of asset information, work pack management, clash detection and optimisation of project schedule.



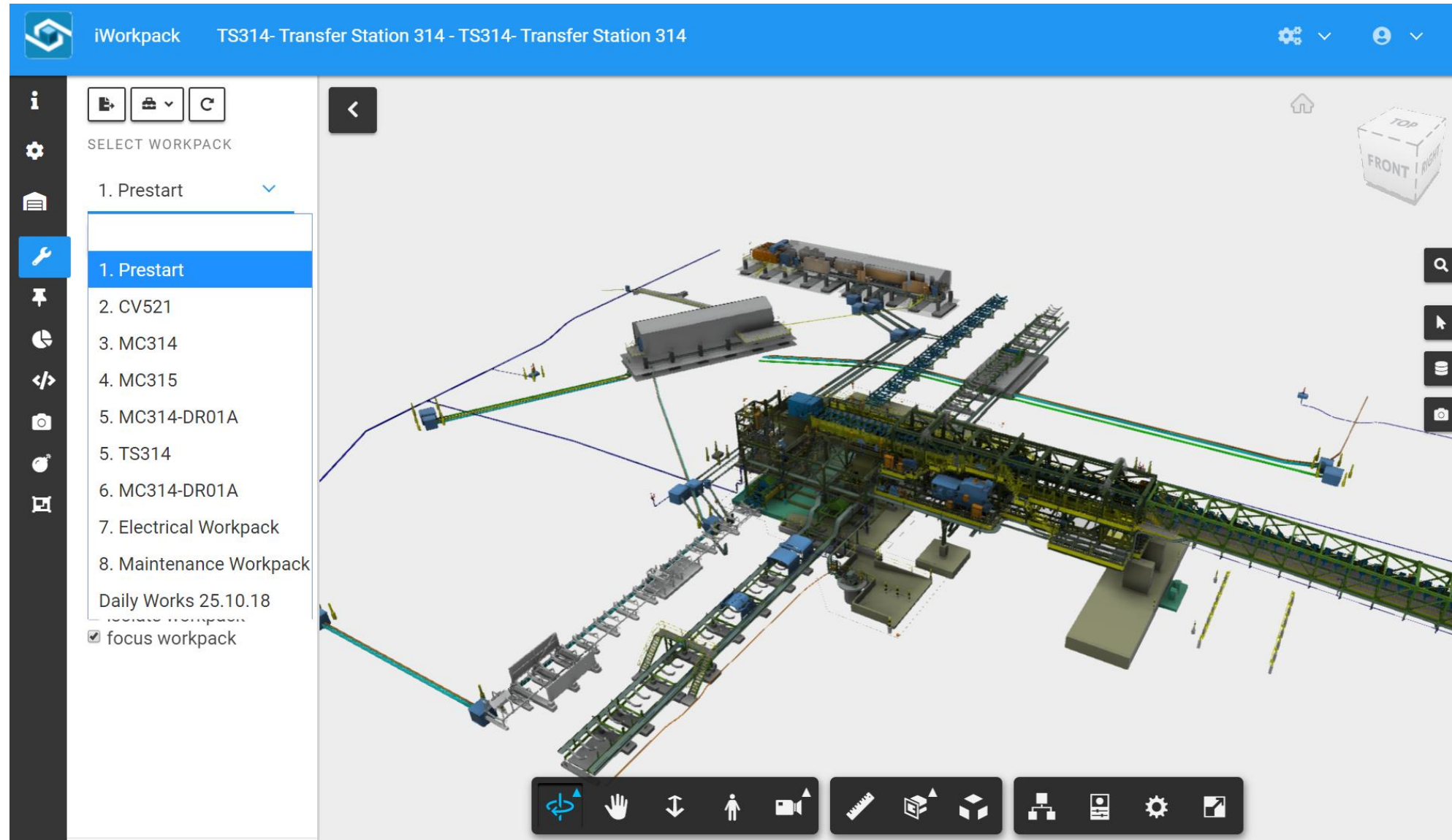
# Digital Asset Visualisation & Information (DAVI)



# MEI Digital Technology & Innovation

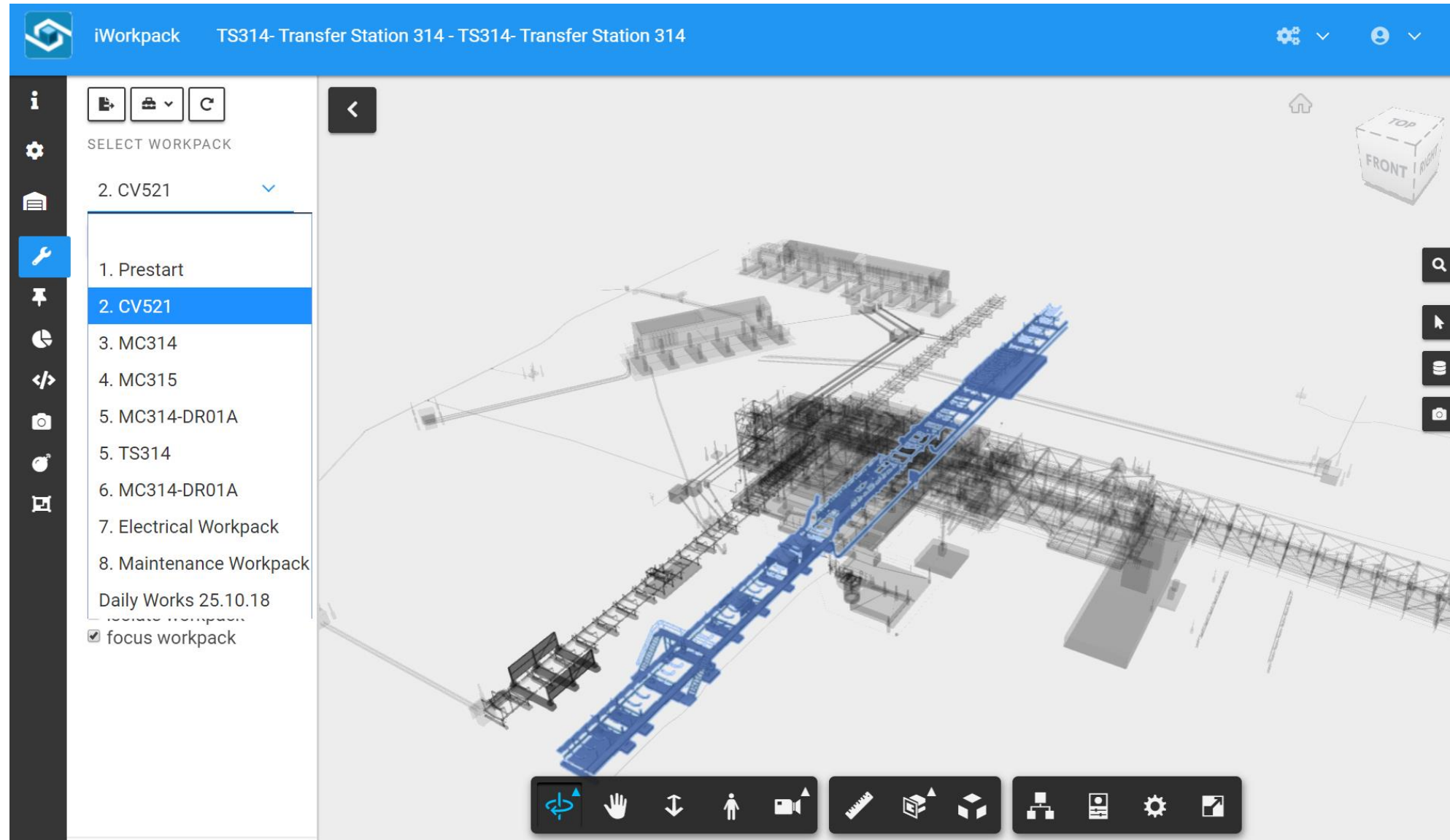


# MEI Digital Technology & Innovation

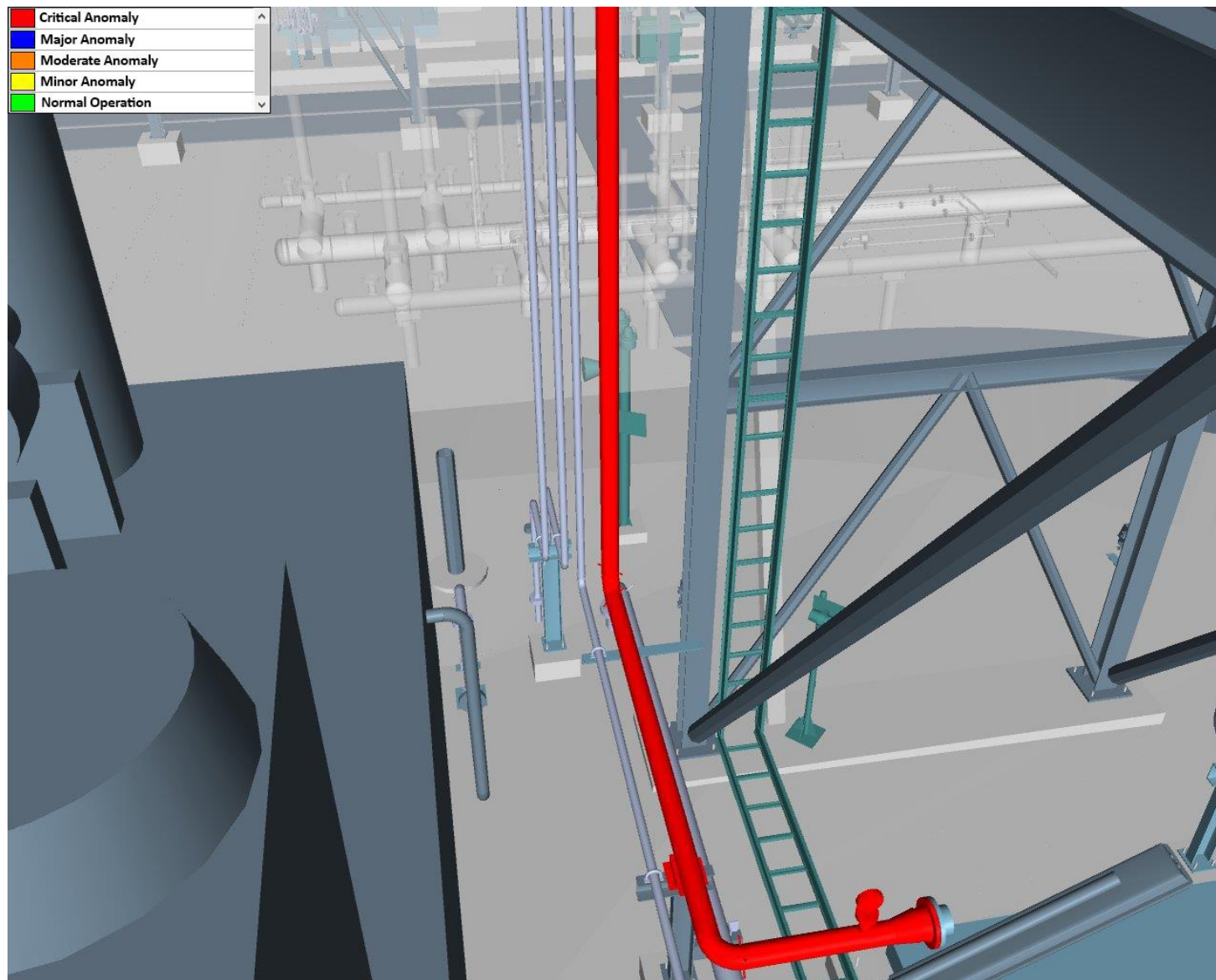




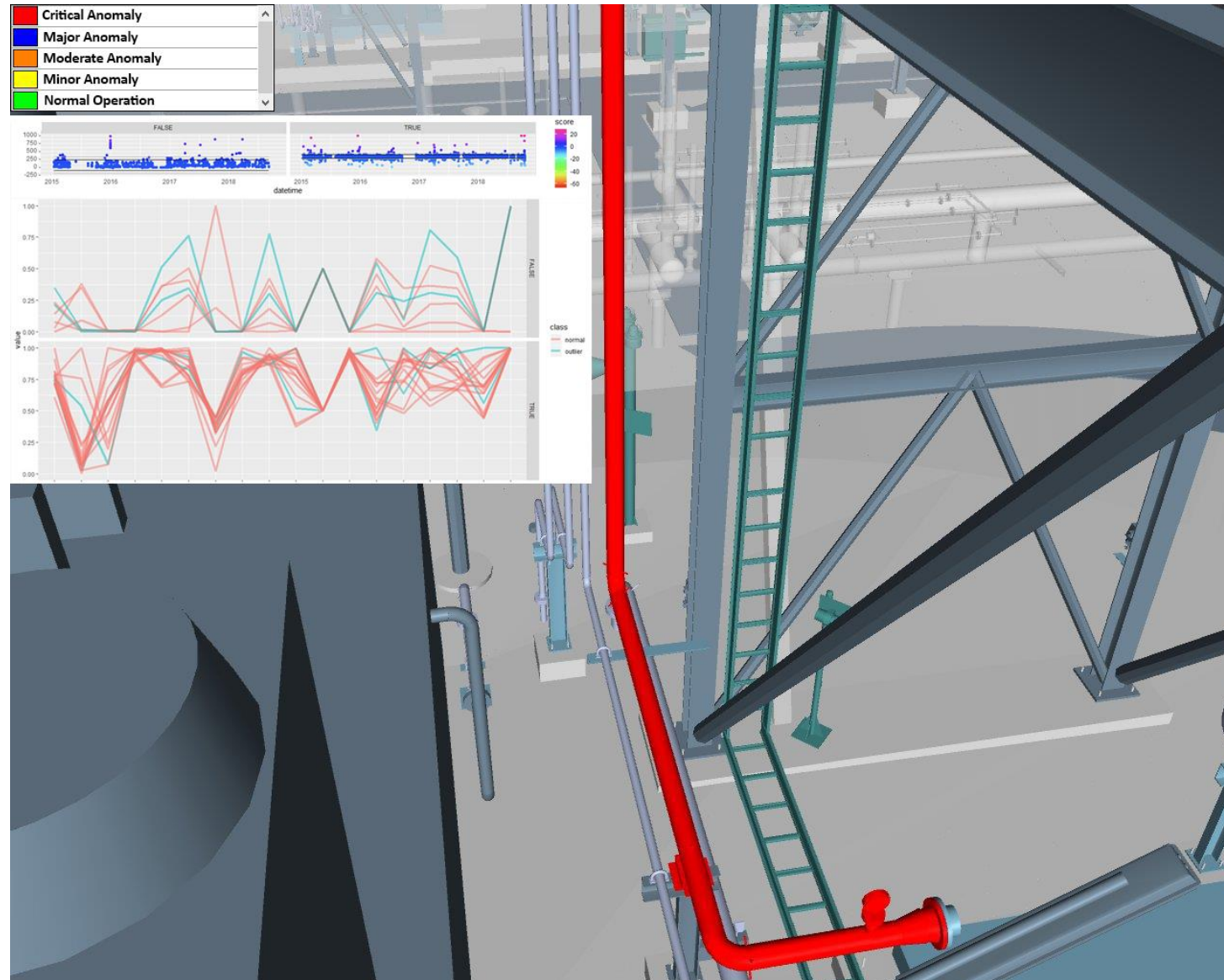
# MEI Digital Technology & Innovation



# DAVI & Data Science



# DAVI & Data Science

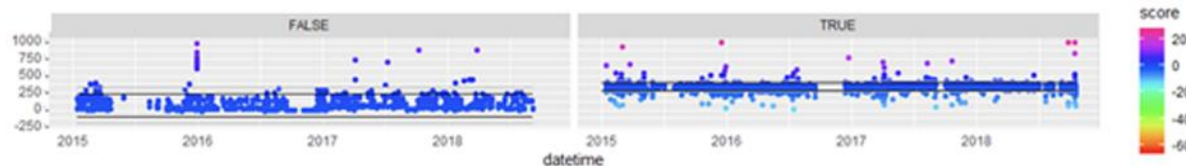




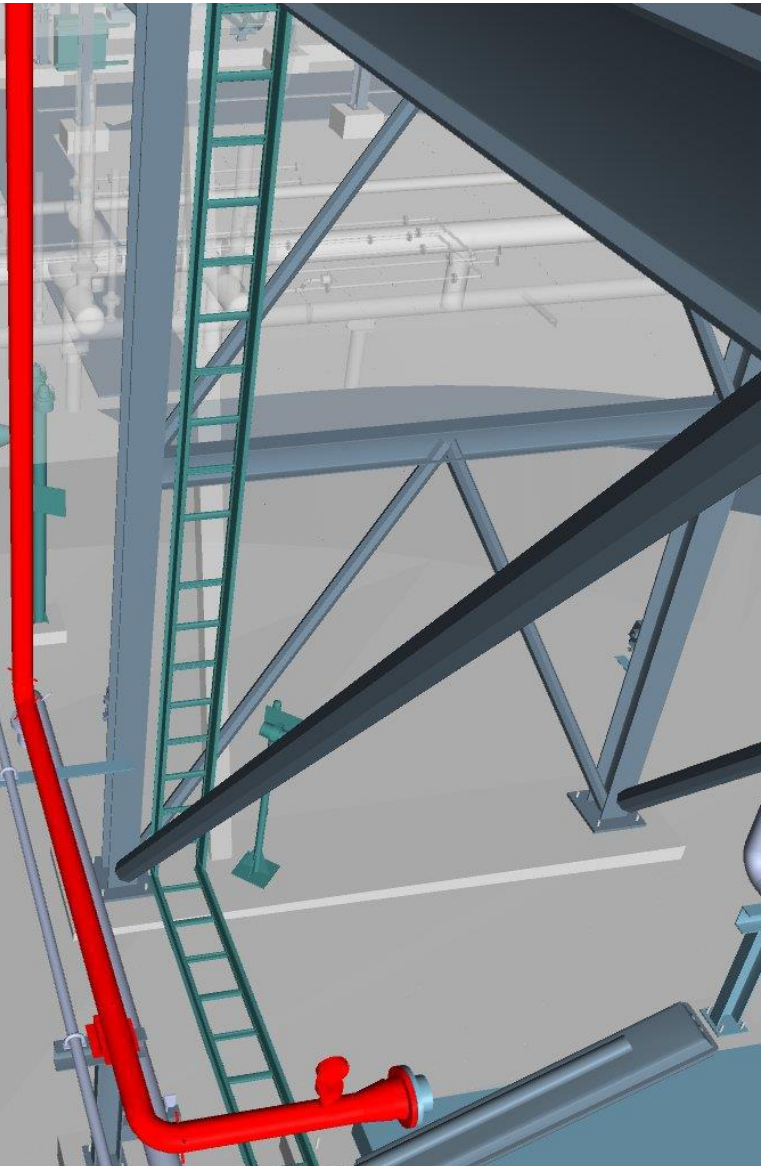
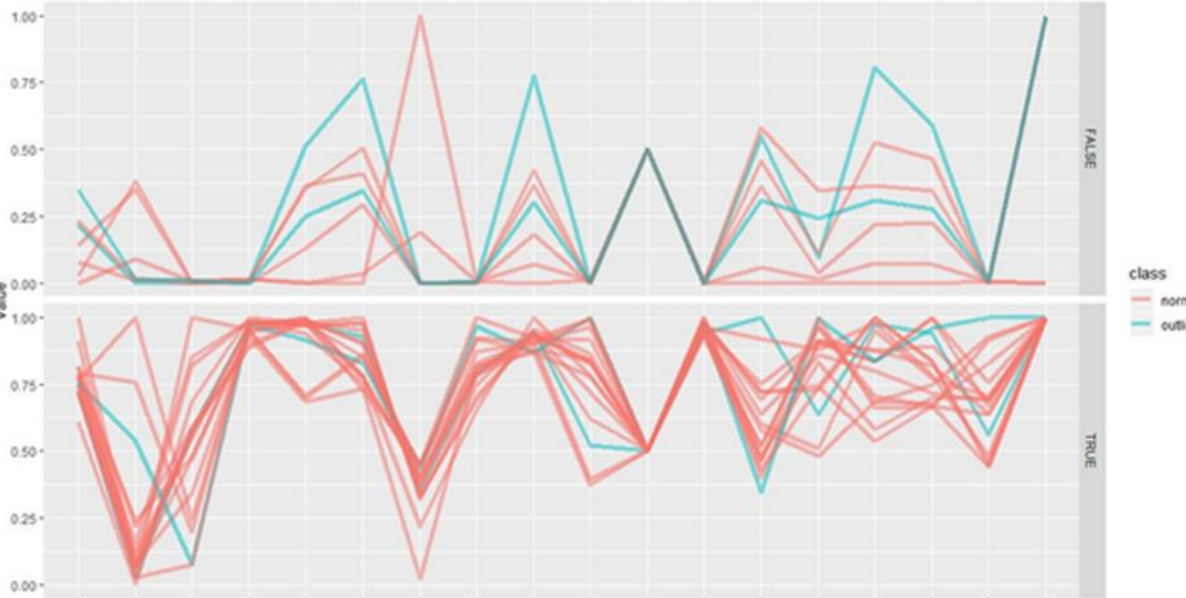
# DAVI & Data Science

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- Critical Anomaly
  - Major Anomaly
  - Moderate Anomaly
  - Minor Anomaly
  - Normal Operation

Asset Anomaly Detection



Multi-Variable Anomaly Drill-Down



# Thank you

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