



# Introduction to Collaborative Visual Data Twin (CVDT)

National Gas Transmission Innovation

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# CVDT Phase 1 2022

Collaborative Visual Data Twin

## Outputs

- Virtual Model using lidar data
- Database & live data link
- Digital Twin Use Cases
- API approach linked to business systems



# Network Engineer Asset



## Data Structure link to associated Virtual Visualisation

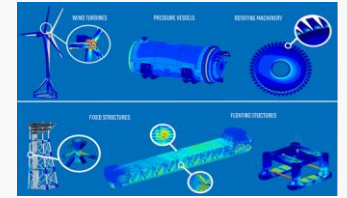
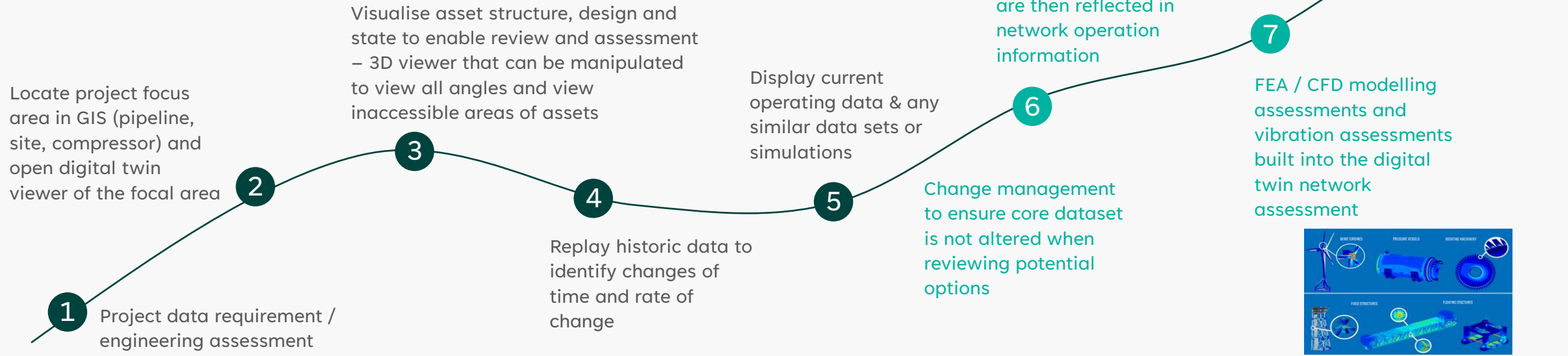
The latest update to GIS helps users find the information they need, however, context can be difficult to determine. Data stored in systems like elipse and ECM needs improved connection into visualisation of the network. Technical line drawings have limitations for new users and non technical users and could be improved with links to virtual models.

### Potential Activities:

- Defect assessment and resolution development
- Asset replacement / modification approach plan / design
- Scada / IOT design / modification
- Risk assessment / HAZID / HAZOP etc...
- Network repurposing assessment
- Upgrading development / approach
- Network upgrade



CDE enable connection of digital twin with suppliers to enable joint development activities



### Opportunities for demonstration

- Data access control and availability management
- Visualisation viewer and data access
- Contextual information associated to location on operational sites
- Links between data stores and virtual models
- CDE interaction and approach
- Software requirements for staff to access information easily – training level minimal
- Ease of dissemination of information
- Annotation and proposed changes interactions
- Asset state assessment viewer
- Ability to disseminate challenges more easily with supply chain

SPADEADAM

Phase One Phase Two

- 1 HP Reservoir
- 2 Isolation Valves
- 3 Ball Valve 1
- 4 Ball Valve 2
- 5 Filter Meter Area
- 6 Meter Skid
- 7 Filter Skid
- 8 Flow Control Valve
- 9 FCV
- 10 NRV
- 11 Pressure Reduction
- 12 Filters
- 13 Meter Skid
- 14 Heat Exchanger
- 15 Boiler LDU
- 16 Pressure Reduction
- 17 Block Valve

# CVDT Phase 2 2023

Collaborative Visual Data Twin

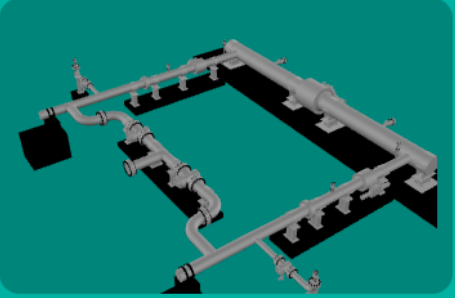
## Mid Point Outputs (March 23 Completion)

- Live Data Connection
- Virtual and Data twin connected without secondary database
- Live change management
- Integration into GIS
- Detailed design info

Phase 2: 2023-10-24



17 Block Valve



Pressure	Temperature
50 gbar	1.91 °C



# CVDT Future Phases

