RIMS
Roading Infrastructure Management Support

in association IDS Infrastructure Decision Support

# Wellington Underground Asset Map Programme

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IDS Infrastructure Decision Support

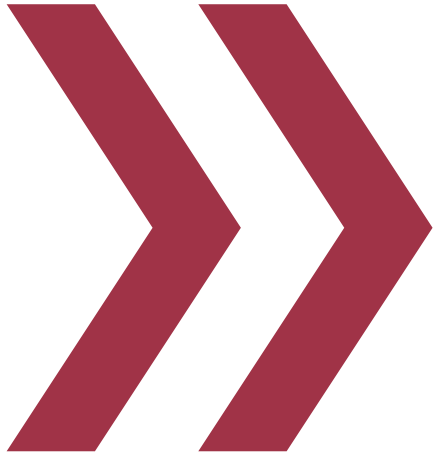
ĀpōpōPō

# Wellington is a city in transition

# What we need…

Wellington's incomplete and unreliable information about underground assets in our roading corridor leads to increased costs in the planning, construction and maintenance of city infrastructure, disruption to anyone needing to access key parts of the city, and increased safety risks to those working on our roads.

Current State



To provide a single, authoritative, and trusted view of relevant asset and contextual data so that work in the subsurface environment can be undertaken safely and efficiently

**A Trusted View**

Future State

# Our Guiding Principles for Success

**Aotearoa Context:**

Within the Tangata Whenua partnership

| | | | |
|---|---|---|---|
| **Purpose:** Must have clear purpose | **Public good** Must be used to deliver genuine public benefit in perpetuity | **Value creation** Must enable value creation and performance improvement | **Insight** Must provide determinable insight into the built environment |
| **Trust:** Must be trustworthy | **Security** Must enable security and be secure itself | **Openness** Must be as open as possible | **Quality** Must be built on data of an appropriate quality |
| **Function:** Must function effectively | **Federation** Must be based on a standard connected environment | **Curation** Must have clear ownership, governance and regulation | **Evolution** Must be able to adapt as technology and society evolve |



Source: *Gemini Principles, Centre for Digital Build Britain*

# Why are we doing this

- Safety profile of excavation work
- Accuracy in the cost-estimation of projects
- Planning and delivery of construction activity
- Location of underground service corridors (empty space) for the installation of new infrastructure
- Asset knowledge and stewardship in lifecycle planning and maintenance
- Compliance with regulatory obligations
- Market Performance and Management

- Time, cost and risk for the design phase of subsurface infrastructure projects
- Contract cost risk
- Disruption to the community – particularly businesses and road users

**Estimated**
Rate of Return

**~12x**

With Potential National Economic Benefit Cost Ratio of **up to 30x** *

* UK NUAR estimates

# Our Vision *something we collectively develop*

**To provide a single, authoritative, and trusted view of relevant asset and contextual data so that work in the subsurface environment can be undertaken safely and efficiently**

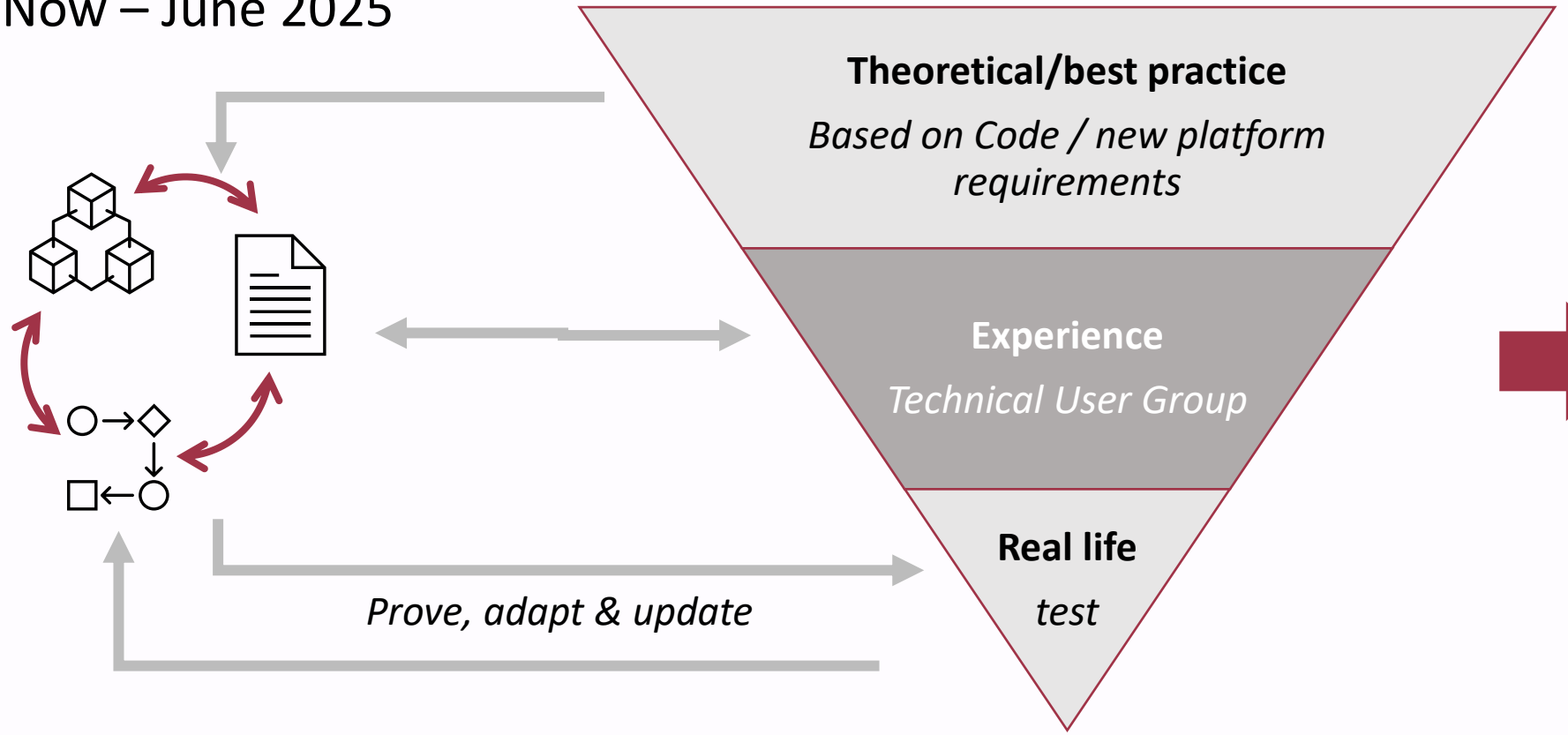
We are going to start simple,
add features
and functionality

It’s not about the platform,
it's about what the platform
enables us to do

# Iterative approach

**Draft**

Now – June 2025




**Final**

July 2025

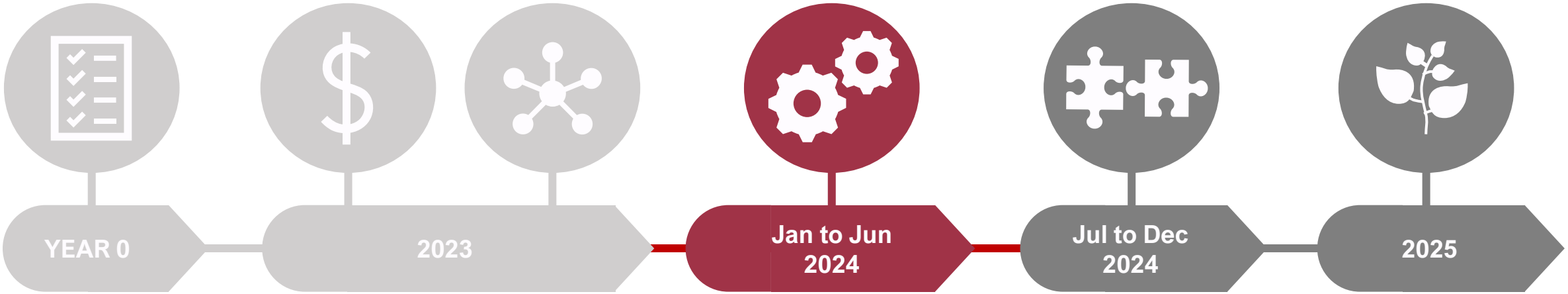
*CARs and Contracts*

*Platform*

*Practice and Process*

# For the Sector, By the Sector

# Programme roadmap




- Industry Consultation
- Business Case Development
- Minimum data requirements

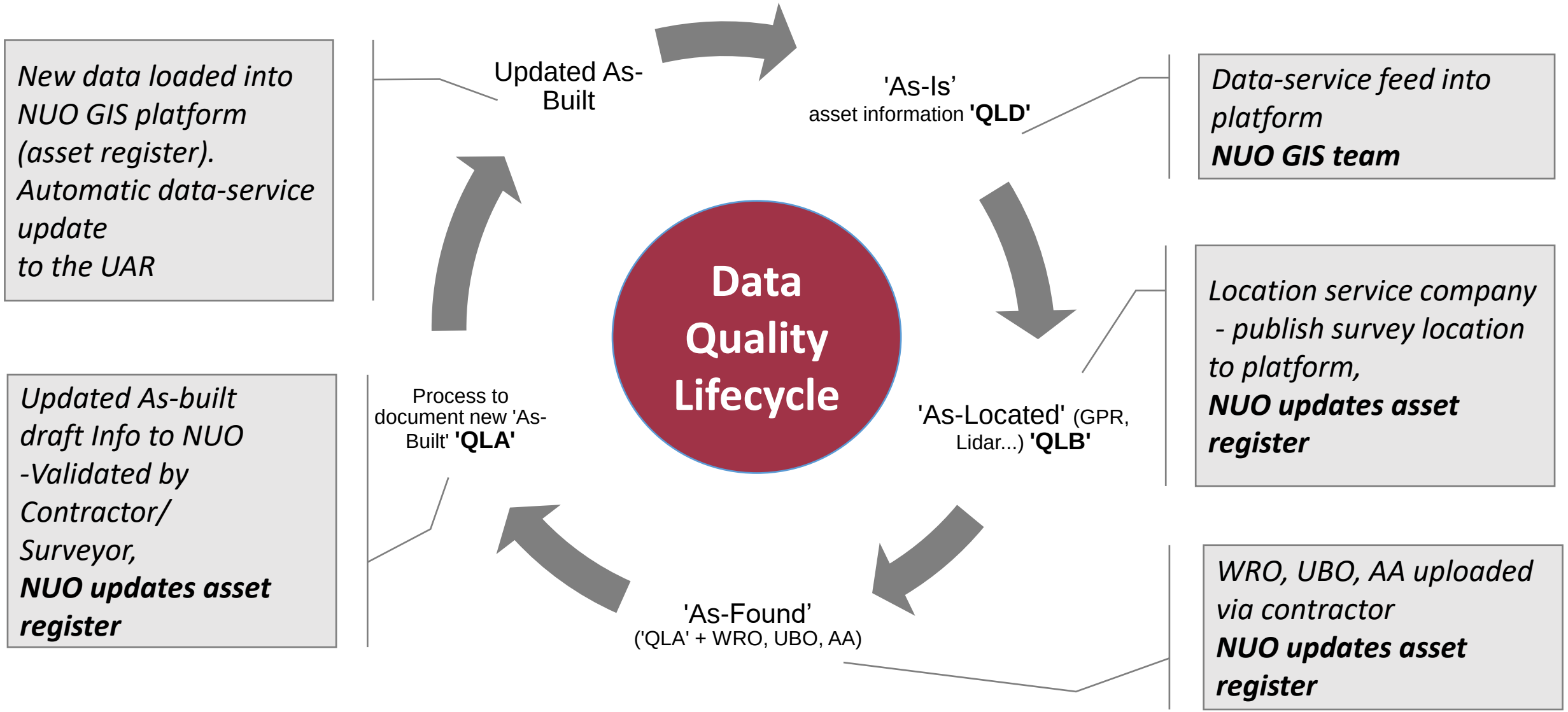
- Funding Confirmed
- Technology Approach
- Procurement
- Industry Engagement
- Business, Policy and Process Development

- Design, test and build the new Operating Model
- **Beta version of technology target go live – Mid July**

- Iterative improvement of the Operating Model (technology, process and policy)

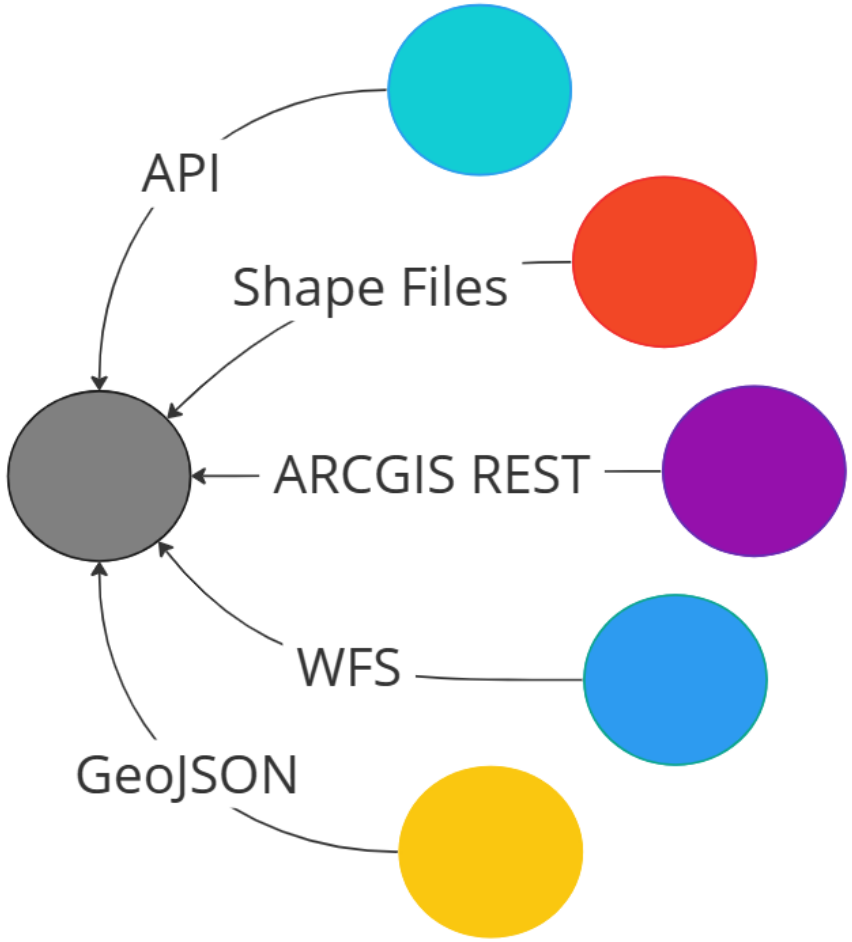
- Grow system
- Technology enhancement
- Augmentation

# Process to capture and improve asset information



# Data Loading

- Data is Federated from Network Owners into a central location.
- This is done using Online REST services so that updates are picked up automatically.
- We can also use hosted or emailed files if there is no online option.
- We support multiple ways for providers to publish and supply asset data.

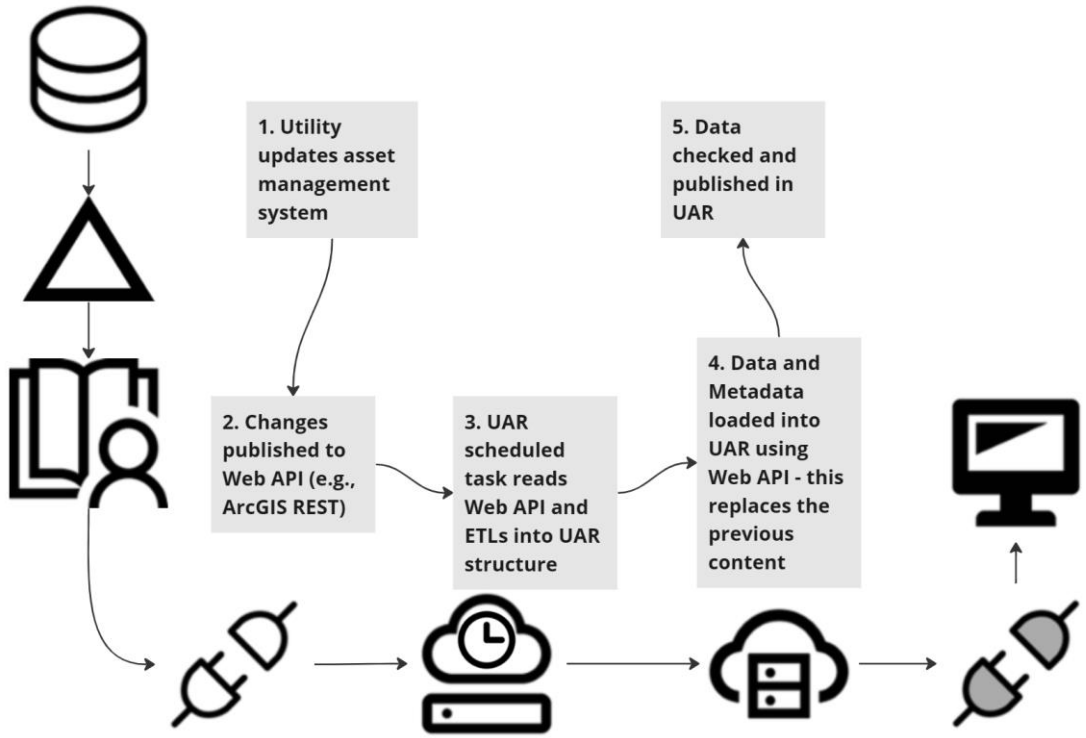


# Data Transformation

- Data is transformed into a common schema structure for ease of use and consistency across asset classes. This is based on MUDDI and other industry standards.
- There are common data fields for the data set, e.g., Contact details – these are supplied once.
- Mandatory Fields are essential – these must be supplied, however field values can be "Unknown" if not available.
- Optional Fields provide extra detail, if available. This can include values specific to a particular utility (e.g., rating, conveyance method etc.,)
- Our initial focus is Network Segments, i.e., utility lines.

# Loading the Underground Asset Register

- This is an automated process using Web APIs.
- No manual intervention is required.
- Metadata is used to describe
  - The data contents and terms of use
  - Links to guidance and safe working practices for assets
- Data update frequency can be as often as the utility data owner wishes to publish data.

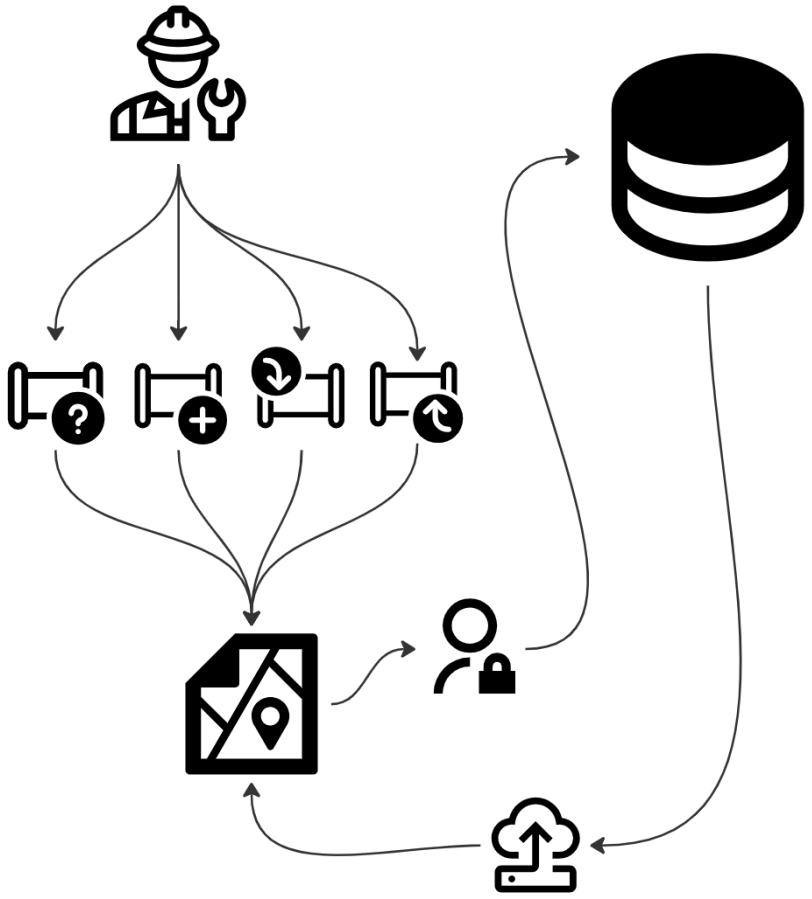


# Application Design

- This is not a traditional Web GIS – this is a dedicated tool for discovering the location of underground assets.
- The application is designed to be easy to use for a specific set of tasks.
  - Draw an area of interest.
  - See what assets are present in the area.
  - Interact with the map to understand what is there and who to contact.
  - Turn layer on or off.
  - View contextual data – e.g., historical significance, protected sites etc.,
  - Printable summary reports to take into the field.
  - Provide feedback.
- Feedback loops allow contractors to report on anything they find in the course of their work.

# Feedback Loops

- In this example the excavating contractor creates records to note
  - Unidentified buried objects
  - Wrongly recorded objects
  - Site observations
- These are entered in the Underground Asset register and are available to the respective utilities asset teams for inspection and potential incorporation into their systems.
- If these are accepted and result in changes, then the Underground Asset Register will be updated during the next scheduled run to bring it in line with the utilities records.
- Over time this means that the accuracy of asset location improves making field working safer and design simpler and reducing disruption to utilities.



# Collaboration

*Each drop creates an Ocean*

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