Asset Management at RWS

Jenne van der Velde
26th March 2019
Rijkswaterstaat’s area of management

Rijkswaterstaat manages three National Infrastructure Networks
Management Area Main Highway Network

Rijkswaterstaat manages:

- ~3,100 kilometres of highways including traffic signalling systems
- ~1,300 kilometres of slip roads and exits and connecting roads
- ~25 rush-hour lanes
- ~2,500 viaducts
- ~15 tunnels
- ~715 moveable and fixed bridges
- ~7 ecoducts
Why Asset Management?

Alignment between policy intentions and real, on-the-ground delivery.

Decision-making aligns with intentions in a structured, transparent and coherent manner.

Minimize and avoid costs.

Balancing between acceptable risks, costs and performance.
Roles (also according to ISO55001)

**Asset Owner (Minister)**
- Future of the network (strategic)
- Framework
  - Targets
  - Risk
  - Budget

**Asset manager (Rijkswaterstaat)**
- Tactical plans
  - Investment strategy
  - Maintenance concept
  - Technologic standard
- Program management
  - Risk management
  - Network management
  - Performance management

**Service provider (Private sector/RWS)**
- Operations
  - Renewal
  - Expansions
  - Maintenance
- Management
  - Project management
  - Process
  - Asset data management

SLA

Contracts
Decomposition of the networks

Network

Overall system

System

Sub-system

Basic object

Maintenance object

Inspection object

- waterways
- corridor/route
- canal
- lock complex
- lock
- gates
- gate hinges
Decomposition of the networks

- **Network**: waterways
- **Overall system**: corridor/route
- **System**: canal
- **Sub-system**: lock complex
- **Basic object**: lock
- **Maintenance object**: gates
- **Inspection object**: gate hinges

Coherently coupled through RAMSHEEP ‘language’

- **R** = Reliability
- **A** = Availability
- **M** = Maintainability
- **S** = Safety
- **S** = Security
- **H** = Health
- **E** = Environment
- **E** = Economics
- **P** = Politics
Challenges...

- Single structure → Network operations
- Implicit decisions → Explicit (based on RAMSSHEEP)
- Project (cost) → Life cycle approach (cost, performance and risk)

Outcome ↔ Output ↔ Throughput ↔ Input
(i.e. Line of Sight)
Creating line of sight (1)

Accessibility  Environment  Safety

Enable road traffic

Horizontal guiding road traffic  Carry road traffic  Make it possible to navigate  Limit Traffic noise  Inform road user

Policy goals...

The functions ...

The assets ...
Creating line of sight (2)

Accessibility
- Horizontal guiding road traffic
- Carry road traffic

Environment
- Enable road traffic
- Make it possible to navigate
- Limit Traffic noise
- Inform road user

Safety

Policy goals...
...via...
The functions...
...connect with...
The assets...
Creating line of sight (3)

Accessibility
- Horizontal guiding road traffic
- Carry road traffic

Environment
- Enable road traffic
- Make it possible to navigate
- Limit Traffic noise
- Inform road user

Safety

Policy goals...
...via...
The functions...
...connect with...
The assets...

Choose the maintenance strategies
In order to deliver the required functions performances
To contribute to the policy goals ...
RWS Approach

• Based on PAS55/ISO55001 (system, culture)

• Information management → BIM and AIR

• RAMS SHEEP (incl. resilience, adaptive plans, future use)

• Stakeholder engagement (IAMPRO, AM4INFRA, NGI, ....)

• Sensortechnology
Joint projects and effort

- CEDR → Network Governance
  - Maturity Assessment (see example)
  - Strategic challenges for the networks

- AM4INFRA → European project
  - Common approach for ‘Line of Sight’
  - Good Methods for decisionmaking (LCC, Risk Approach,...)
  - Use of IT for Asset Management

- I4dF → European project (Infra for the future)
  - Identifying future joint innovation subjects
Example Maturity Assessment (1)
## Example Maturity Assesment (2)

### Maturity Levels - General Definition

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial - Entry</td>
<td>The agency either has not recognised the need for this requirement or if it has recognised it, there is no evidence of intent to progress it.</td>
</tr>
<tr>
<td>2</td>
<td>Basic - Marginal</td>
<td>The agency has identified the way to achieve the requirements and can demonstrate some progress in achieving them. Procedures however may not be clearly set out or repeatable.</td>
</tr>
<tr>
<td>3</td>
<td>Competent - Proficient</td>
<td>No formal ISO system applied but the agency can demonstrate that it achieves relevant requirements set out in ISO 55001 in a systematic and consistent way.</td>
</tr>
<tr>
<td>4</td>
<td>Excellence - Optimized</td>
<td>The agency has deployed and can demonstrate that it achieves all requirements set out in ISO 55001, exceeds some of them and that is systematically looking for optimizations in its Asset Management practice, maximizing value from the management of its assets.</td>
</tr>
</tbody>
</table>
Example Maturity Assessment (3)
What can we learn from each other?

- TII: LCC thinking
- RWS: Funding and performance based contracting
- AWV: Stakeholder surveys and engagement
- ANAS: Connect and join IT systems to useful data for users
- SIA: Line of sight from Strategy to Directives and Operational plan.
Questions