NGN Digitalisation Action Plan

June 2023

Welcome to our Digitalisation Action Plan

This is the June 2023 edition of our Action Plan…

The consistent theme that has run through our Digitalisation Strategy is Integrated Information Management, a philosophy centred on data, designed to maximise the value, governance and control of our data assets through a simplified enterprise architecture that balances people, process and technology.

The work that we have done in RIIO-GD1: implementing S/4HANA; mastering our data in a single, consistent schema; building our own mobile applications for work management and field data capture; and embedding an in-house digital capability, means that we are uniquely placed to deliver new digital products and services throughout RIIO-GD2 and beyond.

In this Digitalisation Action Plan, we will demonstrate our ability to deliver digital projects at scale that strengthen our compliance with Data Best Practice, enhance the experience of data users, and provide real value to end consumers and stakeholders.

Automate+

Optimising our processes through automation

Stakeholders

- NGN Colleagues
- Local Authorities

Tags

- Efficiency
- Data Quality

What is it?

Building on the solid digital foundations we have put in place with S/4HANA and other complementary technologies, we will build Robotic Process Automation solutions across all our back office processes, whilst also introducing innovative, bot-based solutions to solve operational problems around quality assurance and material logistics.

We will be doing this at scale, across all of our processes, and this is only possible due to the work we did in RIIO-GD1: introducing strong data awareness and management; implementing a carefully thought-out strategy involving world-class technologies like S/4HANA; and pioneering the use of cloud.

We will automate c.50 processes over the next 12 months, whilst also embedding an in-house RPA capability to ensure that automation continues to be implemented in the most effective and cost-efficient way.

"Working to ensure our data is right first time, every time…"

"Giving our colleagues the time and space to do amazing things…"

Why are we doing it?

Automating repetitive, often laborious tasks will free up time, allowing our colleagues to concentrate on value-adding activities. It will also mitigate the risk of human error as our data is processed, increasing data quality and enhancing the value of our data.

Project Milestones:

Phase One: Foundational infrastructure work, business engagement and design. **(Nov '22 – May '23)**

To Start | In Progress | **Complete**

Phase Two: Build bots in partnership with specialist third-party. **(Jun '23 – Dec '23)**

To Start | **In Progress** | Complete

Phase Three: Embed bot building as a 'Business As Usual' capability. **(Jan '24 – May '24)**

To Start | In Progress | Complete

What's happening in the next 6 months:

Now that we have the correct infrastructure in place, and have mapped out a large number of our processes, we will be spending the next six months building and deploying bots using a mixture of SAP Process Build and Microsoft Power Automate.

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Information Lifecycle Management

Looking after our data

Stakeholders

- Data Users
- NGN Colleagues

Tags

- Open Data
- Data Quality
- Data Best Practice
- Efficiency

What is it?

SAP Information Lifecycle Management
We will implement SAP Lifecycle Management (ILM) across our SAP estate, providing us with the ability to manage complex data assets at scale.

Automated Data Retention & Archiving
ILM automatically archives data assets based on retention policies that are built in to the solution. Workflow ensures that data owners are kept informed on the status of all the data assets they own.

Optimised Real-time data access
By maintaining robust archiving we ensure that the right data is available at the right level of accessibility, be that real-time access or batch upload. ILM provides us with the facility to access archived data assets should they be required.

Enhancing our GDPR services
ILM provides the ability to tag and search personal data assets to assist with Data Subject Access Request and other Individual Rights.

"Helping us to manage all our data assets in a consistent and governed way…"

"Making sure the right data is available in the right way…"

Why are we doing it?

Automated data retention and access management not only increases the efficiency and effectiveness of the internal processes that run on the data, they also support compliance with Data Best Practice guidelines and help to ensure an optimised open data experience for Data Users.

Project Milestones:

Phase One: Preparation, analysis, stakeholder engagement and strategic planning. **(May '23 – Sept '23)**

To Start | **In Progress** | Complete

Phase Two: Configuration of SAP Information Lifecycle Management. **(Oct '23 – Feb '24)**

To Start | In Progress | Complete

Phase Three: Monitoring & Improvement. **(Mar '24 – May '24)**

To Start | In Progress | Complete

What's happening in the next 6 months:

We will continue our comprehensive programme of data asset analysis and engagement with all stakeholders to ensure the needs of Data Users are fully supported by the ILM solution.

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Asset Data Intelligence

Applying advanced technology to drive data quality

Stakeholders

- NGN Colleagues
- Network Companies
- Data Users

Tags

- Net Zero
- Efficiency
- Data Quality
- Open Data
- Data Best Practice

What is it?

The Rules-Based Component
We have incorporated real-time validation of asset data at the point of entry into our S/4HANA system, with alerts notifying and educating the user. Based on business rules, these are multi-characteristic, high-complexity algorithms.

The AI Component
The AI was originally fed the existing business rules, however, statistical relationships were not hard-coded, with the solution utilising Machine-Learning to develop new validation processes.

With Dynamic Visualisations
Real-time dashboards visualise large datasets in a way that allows the user to focus on outliers, to drilldown, verify and correct anomalies. Any new rules, once signed off by the business owner, can be added to the rules-based component.

"Making sure our Open Data is always accurate and reliable…"

"Using Artificial Intelligence to continuously validate asset data at scale…"

Why are we doing it?

As we open Energy Data, and make it available to all data users, it is vital that this data is accurate, consistent and complete at all times. We will need to maintain that data quality on all our data assets in the most efficient and effective way possible, and utilising Artificial Intelligence allows us to provide this in a sustainable way across all our data assets.

Project Milestones:

Phase One: Build a Proof of Concept to demonstrate value. **(Nov '22 – Jan '23)**

To Start | In Progress | **Complete**

Phase Two: Productionise the solution and fully integrate it with our S/4HANA. **(Feb '23 – May '23)**

To Start | In Progress | **Complete**

What's happening in the next 6 months:

Now that it is up and running on our largest data set, validating c.1.5m records every hour, we will monitor performance and evaluate where else to deploy the solution.

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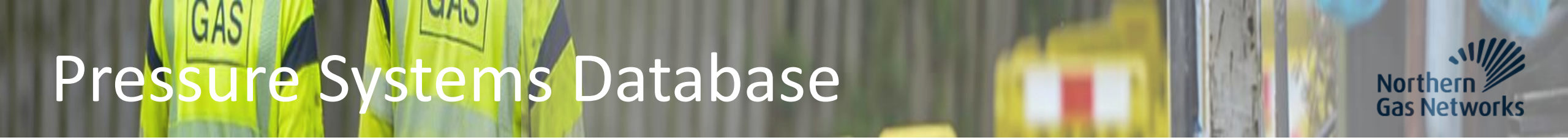

Pressure Systems Database

Enhancing Business Critical Data Systems

Stakeholders

- Data Users
- NGN Colleagues

Tags

- Open Data
- Data Quality
- Data Best Practice
- Reliability

What is it?

During RIIO-GD1 we designed and implemented a robust, flexible, highly interoperable data schema that was consistent across all our data assets. This work was a fantastic enabler for us to meet the challenges and opportunities of the Data Best Practice guidelines.

However, there is still work to be done, especially in identifying data assets that still sit outside that central schema, and bringing them in line. Our recent focus has been on our Electrical & Instrumentation data, our Service Governor and Logger data, and the data held in our Pressure Systems Database.

We will assess the quality of these data assets, perform any necessary data improvement or enriching, migrate the data into our S/4HANA schema, and build front end applications for all read/write and update activities.

"Bringing all key Data Assets into a consistent data schema…"

"Maximising the value of critical data…"

Why are we doing it?

Bringing these data assets into a consistent, interoperable schema means not only can we maintain and utilise this data in a much more efficient and effective way, but also allows us to apply the same strong data management and governance, in terms of data classification, quality control, retention etc, thereby increasing the quantity and variety of data available to data users.

Project Milestones:

Phase One: Identify data assets and perform data quality assessment. **(Feb '23 – Apr '23)**

To Start | In Progress | **Complete**

Phase Two: Migration of E&I and Logger/Governor data into S/4HANA. Build Interoperability of logger data with OSI Pi system. **(Apr '23 – Jun '23)**

To Start | In Progress | **Complete**

Phase Three: Rebuild PSDb functionality in S/4HANA. **(Jun '23 – Dec '23)**

To Start | **In Progress** | Complete

What's happening in the next 6 months:

Having mapped the data held in our Pressure Systems Database, we will migrate the data into S/4HANA, and rebuild the front-end functionality of the PSDB utilising a Fiori application.

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Open Data Portal

Empowering change through data

Stakeholders

- Data Users
- Local Authorities

Tags

- Open Data
- Data Quality
- Data Best Practice
- Net Zero

What is it?

A Digital Data Hub
Our open data portal will provide end users with a fully interactive, self-serve web application, where they can access our open data assets, submit a request for data that is not already available, feedback on data quality issues, and publicise their data initiatives.

Full Transparency
The portal will provide access to geospatial data on our physical assets and operational performance data. In addition, end users will find data on the portal itself, how it is used, what requests have been made, and what policies we are following.

"Opening our data for everyone to explore and use…"

Why are we doing it?

In order to comply with Data Best Practice Guidelines, we must treat all of our data assets as 'Presumed Open' and make those assets classified as open available to all data users. Even more important than that, our data can be a vital part of the drive towards Net Zero and energy security.

"Helping all users access the data they need…"

Project Milestones:

Phase One: Stakeholder engagement and requirements gathering. **(Sept '22 – Jan '23)**

To Start | In Progress | **Complete**

Phase Two: Identifying data assets, classifying and applying metadata. **(Feb '23 – Jun '23)**

To Start | In Progress | **Complete**

Phase Three: Design and build Open Data Portal. **(May '23 – Aug '23)**

To Start | **In Progress** | Complete

What's happening in the next 6 months:

The portal will go live in August 2023, and will feature in our Stakeholder Event in September. We will spend the next 6 months promoting use of the portal, gathering feedback, triaging any new requests and increasing the number of data assets available.

Chat Bots

Expanding the User Experience

Stakeholders

- Data Users
- Customers

Tags

- Open Data
- Data Quality
- Data Best Practice
- Efficiency

What is it?

We are introducing interactive chat bots embedded into both our intranet and internet websites. These bots provide a tailored, guided user interface into many of our key processes. For colleagues this means they can log queries, find answers to frequently ask questions and initiate work flows to both our IT Service Desk and HR department. Customers can make enquiries about work in their area, report a fault, apply for a new connection or log a complaint.

The bots have been designed to be intuitive and enjoyable to use, with an element of conversational AI to make sure the interaction is as seamless as possible.

The bots are made even more effective due to the our consistent data schema, making data easy to source.

"Making it easier for our customers to access NGN services…"

Why are we doing it?

Customer expectations on how and when they can access our services are expanding as new technology & media channels are introduced, and our attitudes towards them change. We need to make sure that we are keeping up with these new expectations, whilst ensuring that no-one is left behind. It is not a case of replacing old communication channels, but augmenting the customer experience by introducing new ones.

"Helping all users access the data they need…"

Project Milestones:

Phase One: Introduce Proof of Concept IT Service Desk bot. Learn from colleague interactions **(Jun '22 – Nov '22)**

To Start | In Progress | **Complete**

Phase Two: Expand bot capability to include Human Resources. **(Nov '22 – Jan '23)**

To Start | In Progress | **Complete**

Phase Three: Build customer facing chat bot. **(Feb '23 – Aug '23)**

To Start | **In Progress** | Complete

What's happening in the next 6 months:

We'll be expanding the areas covered by the chat bots to include Open Data requests, enquiries about digitalisation and Action Plan updates.

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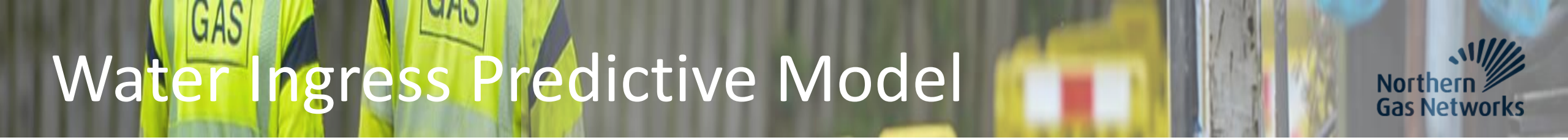

Water Ingress Predictive Model

Making informed decisions based on data analytics

Stakeholders

- Network Companies
- Customers
- NGN Colleagues

Tags

- Efficiency
- Reliability

What is it?

Water infiltrating our pipes, either naturally or through interference damage, can cause major disruption to the gas supply. To ensure our pipes are as free from water as possible, we have syphons strategically placed on our underground pipes. We regularly visit these syphons to remove any water that has gathered there. As the syphons are underground, we do not know if there is water in them until we get there, and many visits result in little or no water being found.

We have built predictive models utilising the data we hold in S/4HANA to provide real-time forecasts of when and where syphons will require emptying. The models have proved extremely accurate and useful in workload planning.

"Using analytics to make better decisions for our customers…"

Why are we doing it?

With these models we can optimise our visits, reduce wasted travel (and our associated carbon footprint). Water ingress increases the risk of supply interruption, and reduces the efficacy of the gas, increasing consumption. The models also provide a blueprint which we can apply to other areas of the business

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"Increasing network reliability …"

Project Milestones:

Phase One: Data mapping, model design, creation and training. **(Feb '23 – Mar '23)**

To Start | In Progress | **Complete**

Phase Two: Operational PoC in one of our 9 geographic areas. **(Apr '23 – Jun '23)**

To Start | In Progress | **Complete**

Phase Three: Assessment and next steps. **(Jun '23 – Jul '23)**

To Start | **In Progress** | Complete

What's happening in the next 6 months:

We'll be assessing the operational impact of our PoC, and identifying other areas where similar analytical models can be apply. One potential candidate is in forecasting the number of gas escapes that will be received, based on weather data as well as other factors.

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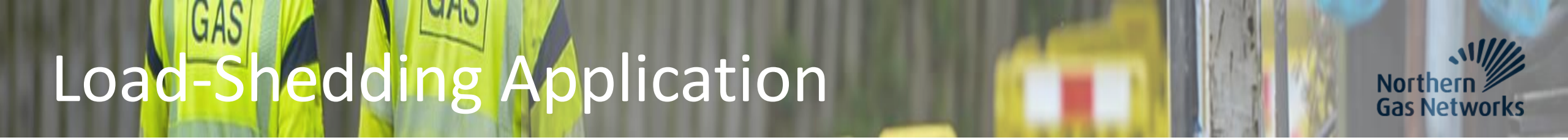

Load-Shedding Application

Expanding the User Experience

Stakeholders

- Network Companies
- Customers

Tags

- Efficiency
- Reliability
- Energy Security

What is it?

In the event that the supply of gas cannot meet the demand, for instance after a catastrophic supply interruption, geopolitical tensions or inadequate output, then load-shedding is the last gasp option to ensure that those essential users who are Non-Interruptible (or Firm) remain on supply. If a load-shedding situation occurs, it is imperative that we are able to identify and contact those large capacity users who have Interruptible contracts quickly. In the past this process has been extremely manual, relying on multiple excel spreadsheets.

We now store the interruptible contracts in S/4HANA, and have built a Fiori application to allow easy access to this data, in a format that enables us to record every contact with the interruptible users, maintain their contact details and report the progress of any load-shedding event or simulation in real-time to the National Grid.

> "Digitising critical National energy security processes…"

Why are we doing it?

Actual load-shedding events are fortunately extremely rare, however, it is incumbent upon us to be ready for such an event at any time, and to be able to respond quickly, efficiently and with maximum assurance. The work that we have done on the data management of interruptible contracts, plus the addition of a well-designed and easy to use front end, means that we are in the best position possible in this vital energy security issue.

Project Milestones:

Phase One: Process Mapping, Data assessment and design. **(Dec '22 – Feb '23)**

To Start | In Progress | **Complete**

Phase Two: Build font-end applications in Fiori. **(Mar '23 – Jun '23)**

To Start | In Progress | **Complete**

Phase Three: Simulation testing. **(Jun '23 – Aug '23)**

To Start | **In Progress** | Complete

What's happening in the next 6 months:

With the data now mastered in S/4HANA, and the Fiori application in production, we will run several internal simulations, prior to the next national test.

Contact us…

We would really appreciate your feedback on our Digitalisation Action Plan

This Action Plan should inform and bring value to you. If there is any clarification, question or comment regarding this plan, we would love to hear from you. Please get in touch with us via one of the communication channels listed below.

Tom at tpollock@northerngas.co.uk

@NGNgas

northerngasnetworks

we are the network