XRN5472 – Creation of a UK Link API to consume daily weather data for Demand Estimation processes

High Level System Solution Impact Assessment

Change Overview

XRN5472: Creation of a UK Link API to consume daily weather data for the Demand Estimation processes

Weather data is used to calculate the Composite Weather Variable (CWV). The CWV is used in demand modelling processes which produce output that supports multiple calculations in the gas industry e.g. NDM Nominations/Allocation which support daily demand attribution in Gemini, AQ calculation, Peak Demand estimation and more. All industry parties rely on all or some of these processes.

The current CDSP Weather Data Service Provider has given notice that it will not be able to support the current mechanism (FTP) of delivering daily weather data (forecasts and observations) to UK Link beyond March 2023. The weather data is delivered from one of their legacy systems which they are phasing out and replacing with APIs.

The change required is to move away from receiving weather data by FTP in a specific file format to 'pulling' the data needed from the Weather Data Service Provider, via APIs, converting the data into a readable format and pulling it into the relevant weather data table in UK Link. The primary benefit of making this change is to maintain the relationship with the current weather data service provider thereby securing the delivery of the CDSP's UNC Section H / DSC obligations associated with the calculation of a daily CWV.

In addition, making this change will move the current process away from an outdated mechanism for transferring/digesting data to a more flexible approach, which will be in line with how many data and technology companies now operate. As a consequence the proposition would also be more attractive to future weather data service providers.

Solution Options

1	**Use Azure Functions to convert and transfer data into UKLink**

Option 1 - High Level Impact Assessment

1 – Use Azure Functions to convert and transfer data into UK Link

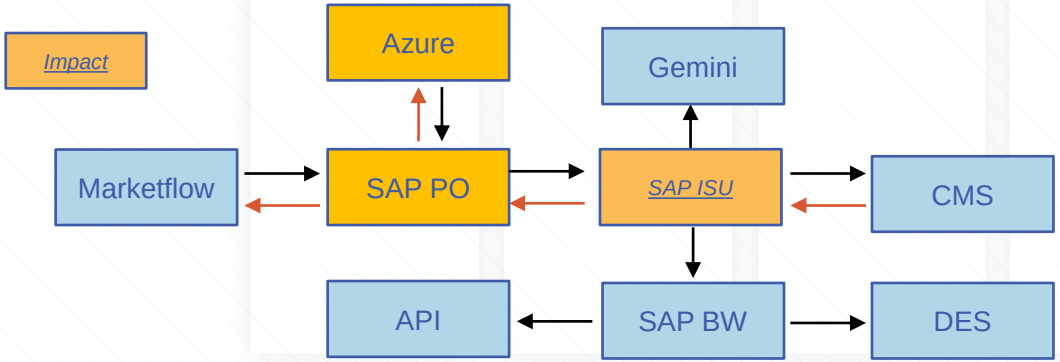
Activities required to be done:

1. Azure Functions:
   - 1.1 Set up API calls for both AWV & FWV values to pick up the data
   - 1.2 Create Azure Functions app
   - 1.3 Create a Storage Account
   - 1.4 Provision the Business Logic into the function
   - 1.5 Conversion of the JSON data to XML / CSV & store in Storage Account
   - 1.6 Open firewall ports
   - 1.7 Whitelist IP addresses
   - 1.8 Clone the resources from UAT to Pre-Production

2. SAP PO:
   - 2.1 PO Interface creation for Polling the file
   - 2.2 Mapping XML to XSD and sending to ISU

3. SAP ISU:
   - 3.1 Creation & Configuration of AHD & FHD Idoc Types
   - 3.2 Immediate Processing Program to store data into the Custom table
   - 3.3 Program to create the FWV & AWV IDocs hourly
   - 3.4 Re-design existing alerting mechanism program to reference the new table.
   - 3.5 New screen for Weather Station amendment

Impacted Systems



Assumptions / Clarifications

- All data will be pulled into Azure where it will be snipped and converted before transfer to SAP PO and consumption within SAP ISU
- Weather data will be stored in ISU with minimal storage in Azure
- No existing SAP ISU functionalities after the AWV & FVW IDoc creation will require any change.
- Scenarios for making Weather Station amendments and for replacing missing weather data catered for
- Market trials are out of scope of this HLSO
- PIS of 1 month is included in the scope of this HLSO
- External communications will be managed by the project team
- Costs may vary during actual delivery depending on changes to requirements, design & testing requirements.
- Penetration testing will be required
- Azure subscription / platform cost tbc (in Detailed Design) but likely to be minimal as amount of data to be stored is low

Overall Impact	Release Type	High Level Cost Estimate
Small	Stand alone	35,000 to 75,000 GBP

Option 1 - System Impact Assessment

	Reports	Interface	Conversion	Enhancements	Workflow	Data Migration
System Component:	SAP ISU	Azure, SAP PO & SAP ISU	n/a	n/a	n/a	n/a
Impacted Process Areas:	Weather & AQ	Weather & AQ	n/a	n/a	n/a	n/a
Complexity Level (per RICEFW item):	Medium	Medium	n/a	n/a	n/a	n/a
Change Description:	Hourly AWV & FWV IDoc creation	1. Azure development* 2. JSON to .csv/.xml in Storage account to PO 3. PO to ISU in IDoc format	n/a	ISU screen for weather station amendments	n/a	n/a

	ISU	BW	PO	AMT	DES	API
Test Data Prep Complexity:	Low	n/a	Low	n/a	n/a	n/a
Unit and System Test Complexity:	Medium	n/a	Medium	n/a	n/a	n/a
Pen Test Impact:	n/a	n/a	n/a	n/a	n/a	n/a
Regression Testing Coverage:	Low	n/a	n/a	n/a	n/a	n/a
Performance Test Impact:	Low	n/a	Medium	n/a	n/a	n/a
Market Trials:	n/a	n/a	n/a	n/a	n/a	n/a
UAT Complexity:	Medium	n/a	Medium	n/a	n/a	n/a

*Development of Azure Functions including setting up API calls for both AWV & FWV values, create Azure Functions app, create Storage Account, provision the Business Logic into the function, conversion of the JSON data to XML / CSV & store in Storage Account, open firewall ports, whitelist IP addresses, and clone the resources from UAT to Pre-Production to Production

Option 1 - Process Impact Assessment

Process Area	Complexity	File Formats	Exceptions	External Screens	Batch Jobs	Performance Test?	CSS Code Conflicts
SPA	n/a	n/a	n/a	n/a	n/a	n/a	No
Metering (Reads)	n/a	n/a	n/a	n/a	n/a	n/a	No
Reconciliation	n/a	n/a	n/a	n/a	n/a	n/a	No
Invoicing – Capacity	n/a	n/a	n/a	n/a	n/a	n/a	No
Invoicing – Commodity	n/a	n/a	n/a	n/a	n/a	n/a	No
Invoicing – Amendment	n/a	n/a	n/a	n/a	n/a	n/a	No
Invoicing – Other	**Medium**	**No**	**No**	**No**	**No**	**No**	**No**
Rolling AQ	n/a	n/a	n/a	n/a	n/a	n/a	No
Formula Year AQ	n/a	n/a	n/a	n/a	n/a	n/a	No
RGMA	n/a	n/a	n/a	n/a	n/a	n/a	No
DSC Service	n/a	n/a	n/a	n/a	n/a	n/a	No
CSS Processes	n/a	n/a	n/a	n/a	n/a	n/a	No