



AI and Data Innovation Platform Service Definition Document

G-Cloud 15 Framework

January 2026



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1. Service Overview

1.1 What is uSmart?

uSmart is a cloud-based AI and data innovation platform that enables organisations to securely manage, share, analyse, and visualise data. The platform integrates ANY data from ANY source, including real-time IoT data, and provides a comprehensive suite of tools for data management, API publishing, interactive mapping, project dashboards, and reporting.

Developed and maintained by UrbanTide Limited, uSmart generates repeatable insights, streamlines data processes and unlocks revenue, helping organisations meet legislated targets and build data-driven communities.

1.2 About UrbanTide

UrbanTide was formed from the team that bid, planned and delivered Innovate UK's £24m future cities demonstrator for Glasgow. We implemented the £7.2m OPEN Glasgow programme that explored the value of new technologies, opened up city data, and created engaging solutions for a range of urban challenges.

Since then, UrbanTide has grown from strength to strength, working with a wide variety of clients and partners. We believe we can make our communities smart by focusing on the integration of people, data and technology to create more liveable communities for everyone.

UrbanTide Limited is based in Edinburgh, Scotland, with over a decade of experience delivering data management solutions to public sector organisations.

1.3 Target Users

uSmart is designed for organisations that need to:

- Integrate and manage data from multiple sources securely
- Publish open and private datasets with granular access controls
- Provide API access to data for internal and external consumers
- Create interactive maps and visualisations from spatial data
- Apply AI and machine learning to generate actionable insights
- Track projects, budgets, and delivery status in a unified dashboard
- Collaborate on data across teams and partner organisations

1.4 Proven Track Record

uSmart is trusted by a wide range of public sector organisations and their partners, including:

- Energy and Utilities: **UK Power Networks, SSEN, Energy Systems Catapult, Greater South East Net Zero Hub, ReFLEX Orkney**
- Local Government: **City of Edinburgh, North Lanarkshire Council, Sunderland City Council, Somerset County Council, Dartford Borough Council**
- Transport: **Cycling Scotland, SEStran, Active Travel Open Data, Walk Wheel Cycle Trust**

- Public Sector Ireland: **Department of Housing, Local Government and Heritage; trained 80% of Irish public sector organisations**
- International: **City of Bilbao, City of Eindhoven, Venice Municipality**

2. Key Features and Capabilities

2.1 ANY Data, ANY Format, ANY Size

With uSmart you can consume and share any data of any format and any size. This includes big data streams and popular machine-readable formats such as CSV, XML and JSON, proprietary formats such as Excel, Word and PDF, and image formats such as JPG, PNG TIFF, MPEG, Zipped files and basically any data.

We distinguish three types of data:

- Reference data; **that doesn't change very often**
- Batch data; **where new data is added in regular intervals (weekly/monthly)**
- Real-time data; **generated by back-office systems and/or sensors that constantly send updates**

2.2 Dataset Management

uSmart provides comprehensive dataset management capabilities:

- Dataset Creation and Description: **Create datasets with rich metadata, descriptions, tags, and GDPR compliance information**
- Multiple Data Input Methods: **Upload files manually, automate via FTP feeds, or add data programmatically via API**
- Supported File Formats: **CSV, JSON, XML, GeoJSON, Zipped Shapefile, Excel, PDF, Word, and images**
- Publishing Controls: **Three publishing statuses (Draft, Published, Published - On Request) and configurable visibility levels (Private, Shared, Open)**
- Data Pipelines: **Transform raw data automatically - CSV files can be converted to XML and JSON formats**

2.3 API Publishing

uSmart provides a RESTful API enabling programmatic access to platform data and functionality:

- Two Authentication Methods: **Personal API tokens for individual users and system-level API keys for automated integrations**
- Real-time Data Streaming: **Push and subscribe to data streams using REST or websocket connections**
- Configurable Access Levels: **Read-only or read/write permissions set by organisation admins**
- Standard HTTP(S) Methods: **JSON responses for straightforward integration with existing systems**

- Developer Documentation: **Comprehensive Swagger UI documentation and code samples**

2.4 Interactive Maps

Native mapping functionality enables users to create, explore, and share interactive maps:

- Multi-dataset Mapping: **Combine multiple spatial datasets into layered maps with richer geographic context**
- All Spatial Data Types: **Points, lines, polygons, and heatmaps from Shapefile, MapInfo Table, GML, KML, GeoJSON**
- Automatic Map Generation: **Spatial datasets automatically display interactive maps; CSV files with coordinates are auto-converted**
- Customisable Visual Styles: **Adjust map styles and layers to highlight key information**
- Secure Access: **All mapping follows existing access control mechanisms**

2.5 Project Dashboard

The Project Dashboard provides a consolidated view of active and planned work:

- Track budgets, timelines, and delivery status in one location
- Replace manual spreadsheets and fragmented status updates
- Granular access control with private team workspaces and shareable read-only dashboards
- Ready to use without configuration or custom integration work

2.6 Reports and Consumer Insight

Organisation administrators access real-time usage metrics via the Reports dashboard:

- Dataset statistics across the organisation with percentage breakdowns by status and visibility
- Time-based activity tracking: datasets created, viewed, updated, and deleted
- Search pattern analysis provides insights into user interests
- Most viewed datasets ranking and API usage
- CSV export for external analysis or reporting

3. Data Discovery and Sharing

3.1 Data Discovery

We believe it is crucial that your data is easily discoverable and accessible. Depending on the permissions set by the data provider, access to data can be completely open, very restricted (request access), or private.

If a dataset is open, it will be made available on our global discovery pages and automatically pushed to Government Open Data Portals via our DCAT integration, ensuring you reach the widest possible audience.

3.2 Personalised Organisation Page

Your personalised organisation landing page for data discovery can be embedded on your website, eliminating the need to administer another Content Management System.

uSmart's social features include:

- Saving favourite datasets to the user dashboard
- Commenting on datasets
- Contacting the dataset owner with feedback
- Requesting new datasets to be published

3.3 Data Sharing Levels

uSmart supports three main levels of sharing:

1. **Closed:** only members of the organisation have access
2. **Private sharing:** members of the organisation plus selected other individuals have access
3. **Public sharing:** everyone has access

These access levels can be set on a per-dataset basis, providing full control over how closed or open your data is.

4. Visualisations, Analytics and AI

4.1 Data Explorer

For tabular data, uSmart automatically generates a Data Explorer that allows users to sort, search and filter the dataset. Filtering can be done on keywords and by unique values.

uSmart's Data Explorer tool can handle billions of data rows without impacting performance and features an integrated download option that allows users to extract and download a subset of the data.

4.2 Graph and Reporting Tools

uSmart allows any user to generate graphs against any tabular dataset. Features include bar, line and pie charts. Users can save charts onto their dashboard and share them with other users.

4.3 Big Data Analytics

uSmart is a data science-ready platform. Real-time data stored in our system can be analysed using any big data processing solutions. Your data scientist can use programming languages such as Python to execute data processing algorithms that generate new insights from your data.

4.4 AI and Machine Learning Applications

The UrbanTide team can configure and apply domain-specific Artificial Intelligence and Machine Learning algorithms to meet customer needs. These AI applications can draw on all the data in uSmart (both customer-supplied and UrbanTide-supplied data).

AI and Machine Learning applications are partitioned for each customer and may include use cases such as:

- Machine learning on sensor data to create future predictions
- Machine learning on images to create new intelligence
- Combined AI use cases bring sensor techniques and image techniques together
- Natural language processing for automated data classification

4.5 Ask uSmart - Large Language Models

Ask uSmart.ai is our pioneering AI initiative that enhances the uSmart platform by integrating state-of-the-art generative AI with advanced large language models. This initiative is designed to unlock unprecedented value for our customers, enabling the generation of automated insights from their data.

Our solution leverages finely tuned Large Language Models based on robust Foundation Models. These innovative models can process conversational queries, effortlessly translating natural language questions into structured SQL queries with concise output descriptions.

This feature simplifies data extraction, making it accessible and user-friendly for non-technical users, thereby enhancing decision-making across our customer base.

5. User Roles and Access Control

uSmart implements fine-grained role-based access control to manage user permissions:

Organisation level

Organisation (Org) Admin: “Super user” type of role: manages all users (add, delete, change roles), groups and datasets in an organisation.

Specific group level

Group Admin: manage users (add, delete, change roles) and datasets within a group, including specifying user access, and create a new group.

Data Publisher: manage datasets within a group (create, update, publish, delete), including specifying user access. A Data Publisher can see other members of the group, including their email addresses and names.

Data Provider: update an existing dataset within a group - only data, no user access changes. A Data Provider can see other members in the group, but only their names.

Data Viewer: view datasets within a group. A Data Viewer can't see other members in the group.

User roles apply at the organisation level, and individuals can have different roles in different organisations. Groups enable further subdivision of permissions within an organisation.

6. Technical Requirements

6.1 Access Requirements

uSmart is a fully responsive web application accessible via any modern browser on desktop or mobile devices. No separate mobile app or client software installation is required.

- Supported Browsers: **Current versions of Chrome, Firefox, Safari, and Microsoft Edge**
- Connection: **HTTPS (TLS 1.2 or above)**
- Mobile Access: **Responsive design adapts to all screen sizes; complex tables and dashboards reflow to single-column layouts on smaller screens**

6.2 Authentication

User authentication is handled via:

- Username and Password: **Strict password policy requiring a minimum 8 characters with uppercase, lowercase, digit, and special characters**
- Multi-Factor Authentication (MFA): **Mandatory for administrators; configurable for all users by organisation admins**

6.3 API Technical Specifications

- Protocol: **RESTful API over HTTPS**
- Authentication: **AWS Cognito client credentials with API key and secret**
- Real-time: **REST and websocket connections for streaming data**
- Documentation: **Swagger UI with interactive endpoint documentation**

6.4 Supported File Formats

Category	Formats
Tabular	CSV, JSON, XML, Excel (XLS, XLSX)
Spatial	GeoJSON, ESRI Shapefile, MapInfo Table, GML, KML
Documents	PDF, Word, PowerPoint
Images	JPG, PNG, TIFF, GIF

6.5 Web Standards and Accessibility

uSmart uses HTML 5.2, CSS 4, standard character set UTF-8 and complies with the Open Standards principles policy, ensuring broad compatibility and improved support for international languages.

uSmart adheres to WCAG 2.1 Level AA accessibility guidelines. All data transmissions are secured via HTTPS.

6.6 GIS Compatibility

uSmart provides integration with Geographic Information System (GIS) products to enable data consumption in the data-sharing platform and visualisation in embedded mapping, or to provide new data in the appropriate format for visualisation using GIS products.

7. Service Levels and Availability

7.1 Availability Guarantee

uSmart guarantees 99.5% platform availability, measured monthly.

7.2 Performance Thresholds

The following performance thresholds apply 95% of the time during normal operation:

Service	Performance Threshold
Page Load Speed	Within 3.5 seconds
Raw Data Access	3 MB/s or faster
API Access (Simple Query)	8 MB/s or faster
API Access (Advanced Query)	1.5 MB/s or faster

7.3 Issue Response Times

Our Service Level Agreement defines response times based on issue severity:

Severity	Acknowledged	Temporary Fix	Permanent Fix
Critical	1 business hour	1 business day	5 business days
Urgent	1 business day	3 business days	7 business days
Medium	1 business day	5 business days	10 business days
Informational	5 business days	N/A	N/A

Support is provided during Normal Business Hours: 8:00 am to 6:00 pm UK time, Monday to Friday, excluding public holidays.

8. Backup, Disaster Recovery and Business Continuity

8.1 Recovery Objectives

Recovery Time Objective (RTO): 3 business hours

Recovery Point Objective (RPO): 3 business hours

8.2 Backup Strategy

- Full snapshots are taken every night
- Incremental backups are automatically generated throughout the day
- Point-in-time recovery is available from the commit log for any point within the preceding 7 days

8.3 Resilience Architecture

uSmart is built on a microservices architecture deployed on AWS infrastructure with built-in redundancy:

- Services are continuously monitored and automatically restarted if interrupted
- OpenSearch Serverless provides elastic compute capacity that scales dynamically with demand
- Auto-scaling infrastructure handles usage spikes without service degradation
- All system logs are tracked in a central repository for monitoring and rapid incident response

8.4 Business Continuity

UrbanTide maintains a Business Continuity Plan (BCP) including a Disaster Recovery Plan (DRP) as part of our Security Policy. The plan is reviewed and updated annually to reflect changes in technology, processes, and identified risks.

9. Hosting and Data Location

9.1 Infrastructure

Specification	Details
Hosting Provider	Amazon Web Services (AWS)
Data Centre Location	Dublin, Ireland (eu-west-1)
Data Residency	All customer data remains within the UK/EEA
Architecture	Microservices with auto-scaling
Storage	Amazon S3, OpenSearch Serverless

9.2 Data Segregation

Customer data is logically separated to ensure complete isolation between organisations:

- Each customer has a dedicated metadata database
- Files are stored in logically separated folders on AWS S3
- Real-time data is stored in separate keyspaces (effectively different databases)

9.3 AWS Compliance

AWS datacentres comply with ISO 27001, SOC 1/2/3, CSA CCM, and numerous other international security and compliance standards. AWS physical security includes perimeter controls, security personnel, intrusion detection, and comprehensive access logging.

10. Security

10.1 Encryption

Data at Rest: AES-256 encryption for all databases and files, with keys managed via AWS Key Management Service (KMS)

Data in Transit: TLS 1.2 encryption for all communications. All API requests must be made over HTTPS.

10.2 Access Security

- Role-based access control with granular permission levels
- Multi-factor authentication (mandatory for admins, configurable for all users)
- Strict password policy enforcement
- All access logged and auditable
- AWS developer controls require two-factor authentication and are restricted to vetted UrbanTide employees

10.3 Security Testing

- Annual penetration testing by CREST-approved service providers
- Continuous monitoring of software and library versions with prompt security patching
- Security patches can be deployed within one day for critical vulnerabilities
- Development follows OWASP top 10 security guidelines

10.4 OWASP Top 10 Compliance

In our software design and architecture, we have addressed the OWASP top 10 security issues:

4. Injection: All interfaces are fully parameterised
5. Broken Authentication: Takes OWASP ASVS into account
6. XSS: All untrusted data escaped based on HTML context
7. Broken Access Control: Automated verification middleware
8. Security Misconfiguration: Automated deployments with identical environments
9. Sensitive Data Exposure: All data encrypted with strong keys
10. Insufficient Attack Protection: Unusual activity logging, same-day patches
11. CSRF: Built-in CSRF protection
12. Known Vulnerabilities: Continuous monitoring and upgrading
13. Underprotected APIs: Encrypted communications, secured credentials

10.5 File Security

Integrated virus scanning (ClamAV) automatically scans all uploaded files and blocks infected files from being stored on the platform.

10.6 GDPR Compliance

We are acutely aware of the importance of the General Data Protection Regulations. Data held within the platform is accessible only to authorised UrbanTide staff or the organisation's staff for the purposes of the project, unless made open.

Under GDPR, users have control over their personal data and can request for personal information to be provided to them and for personal information to be removed. uSmart's system is completely searchable, allowing data to be exported for portability. No personal data is held for longer than necessary.

11. Onboarding and Training

11.1 Documentation

A detailed online Knowledge Base covers all platform functionality, including user management, data publishing, API access, dashboards, maps, and reporting. Articles are organised by user role and task, enabling self-service learning and quick reference. Documentation is available via the web and can be downloaded as PDF.

11.2 Training Experience

We have extensive experience training the public sector across all data areas. We are the current single provider to the Irish Public Sector for data sharing, data analytics, data anonymisation, data visualisation and linked data.

Over the last 7 years, we've trained nearly 80% of Ireland's public sector organisations and helped Ireland publish over 20,000 open datasets.

11.3 Training Options

- General Overview of Open Data: **Principles, benefits, case studies, governance and engagement**
- Play & Work with Your Data: **Hands-on workshop for preparing and publishing data, creating Data Publication Plans**
- Data Analytics & Visualisation: **Data science methodologies, theory and techniques of data visualisations**
- Anonymisation & Linked Data: **De-personalisation, aggregation, and best practices for linked data**

We can also deliver 'train the trainer' sessions to enable admin users in your organisation to run their own training courses.

11.4 Onboarding Support

New customers receive dedicated onboarding support to ensure successful implementation. This includes initial platform setup, configuration guidance, and hands-on sessions to familiarise teams with key workflows. The platform is designed for immediate use without complex technical setup, allowing teams to begin working with data straight away.

12. Support and Maintenance

12.1 Support Channels

Customers have access to continuous support through multiple channels:

- Helpdesk for issue logging and tracking
- Email support
- Slack notifications (configurable)
- Dedicated account management

12.2 Support Hours

Support is provided during Normal Business Hours: 8:00am to 6:00pm UK time, Monday to Friday, excluding public holidays in Scotland.

12.3 Maintenance

Platform maintenance and updates are included in the service. Because uSmart runs in the cloud, you will always benefit from the latest version with the latest features.

We fix major issues immediately and release hotfixes and minor releases every week. Major new features are generally released every 4-8 weeks, and clients are welcome to preview and test new features on our staging site before they reach general availability.

12.4 Outage Management

Customers are notified of service outages via email alerts. During incidents, proactive update frequencies are defined based on issue severity:

- Critical issues: **Hourly verbal updates**
- Urgent issues: **Daily written updates**
- Medium issues: **End of week updates**

All communications include an issue description, an impact assessment, remediation steps, and an estimated resolution time.

13. Data Export and Exit Arrangements

13.1 Data Export

Users can export data through multiple methods during and at the end of the contract period:

- Self-Service Export: **Direct download from the web interface in standard formats (CSV, JSON, GeoJSON)**
- API Extraction: **Programmatic retrieval using personal API tokens or system-level API keys**
- Assisted Extraction: **Upon request, data provided in client-specified format and media, including transfer to nominated third parties**

13.2 End of Contract Process

On contract termination or expiry:

- Users may extract their data using any of the methods described above
- All client data is securely deleted or destroyed, or returned in full if directed by the client
- Written certification of deletion or destruction is provided within 14 days of completion
- If any legal or regulatory requirements necessitate temporary data retention, the client is notified with full details and a clear timeline for subsequent deletion

13.3 Included in Contract Price

- Data extraction and export in standard formats
- API access for programmatic data retrieval
- Transition support and handover
- Secure data deletion and written certification

13.4 Additional Costs

Bespoke data format conversions beyond standard formats are quoted on request.

14. Certifications and Compliance

14.1 UrbanTide Certifications

Certification	Description
ISO 27001:2022	Information Security Management System certification
ISO 9001:2015	Quality Management System certification
Cyber Essentials Plus	UK Government-backed cyber security certification with independent verification

14.2 AWS Infrastructure Compliance

AWS datacentres comply with extensive certifications, including ISO 27001, ISO 27017, ISO 27018, SOC 1/2/3, CSA CCM, and SSAE-18/ISAE 3402.

14.3 Data Protection

UrbanTide complies with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. Where personal data is processed, a Data Processing Agreement is put in place with appropriate terms to ensure compliance with Data Protection Legislation.

14.4 Data Standards Compliance

uSmart complies with leading data standards, ensuring broad compatibility and interoperability with other public-sector data systems.

14.5 Security Governance

A named board-level director has overall accountability for information security. Security responsibilities are integrated across the organisation, with all staff trained on data protection legislation and security procedures relevant to their roles.

15. Other Procurement Options

UrbanTide is pre-qualified and listed on the following relevant public sector frameworks:

Framework	Reference
Spark DPS Framework	RM6094 Spark DPS
AI DPS Framework	RM6200 Artificial Intelligence
Big Data and AI	RM6195 Big Data and AI

16. Contact Information

For enquiries about uSmart or UrbanTide services:

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