G-CLOUD 15
SYMOLOGY ENTERPRISE (CLOUD EDITION)

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Service Overview

Symology Enterprise (Cloud Edition) provides a fully integrated spatially enabled solution for the management of highways, footways, structures, street lighting, drainage, grounds and parks. The flexible and comprehensive facilities empower users to plan, coordinate, manage, protect, operate and sustain highly efficient highway networks and associated assets, and provide an enduring platform for customer success.

Summary of Symology Enterprise Solution

The Symology system comprises a series of highly integrated, multi-functional solutions areas to facilitate the management of the following areas:-

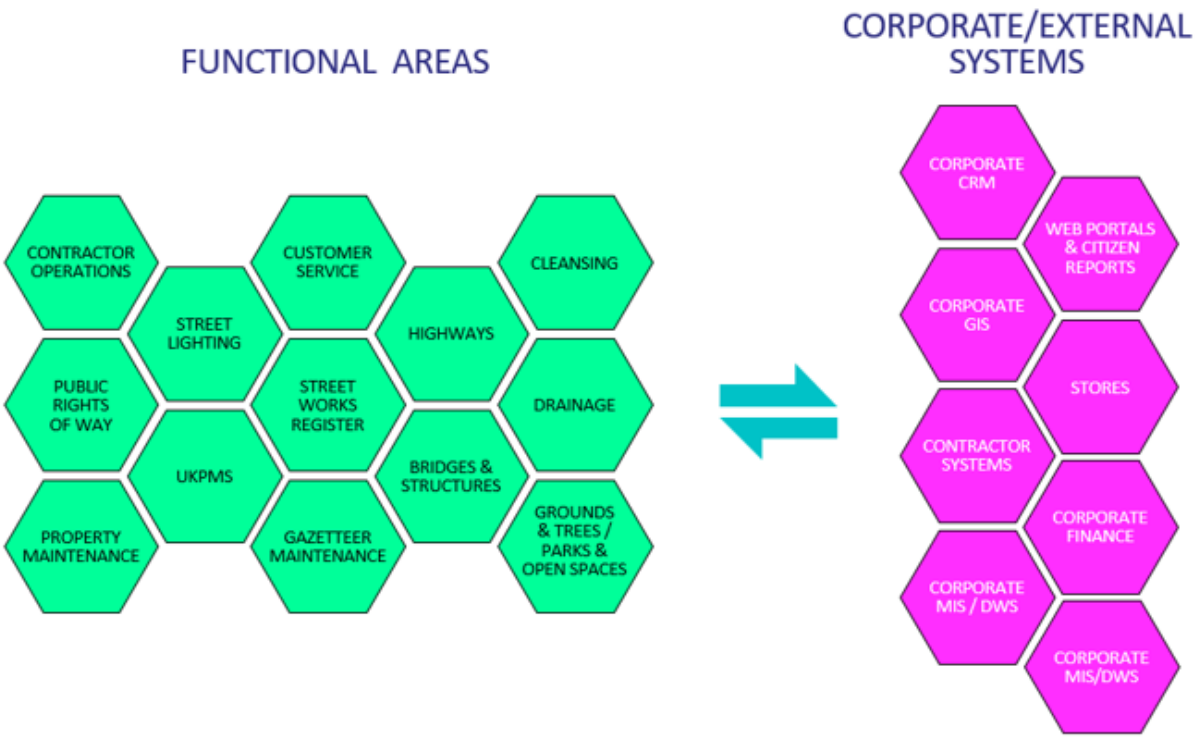
- Customer Service
- Asset Register & Management
- Street Works
- Licences & Events
- Defect/Job Management
  - Reactive Maintenance
  - Planned Maintenance and Schemes
  - Routine Maintenance
- Inspections
  - Routine
  - Ad-hoc
  - Cyclic
  - Condition based
- Lifecycle Planning and Deterioration Modelling (UKPMS/PAS 2161)
- Works Management
- Street Gazetteer

In addition to:-

- Mobile Solution
- Integrations/Interfaces (including but not limited to Smart City)
- Self Serve Web Portals (Channel Shift)

The above facilities can be utilised in various combinations, or in total to provide solutions in any or ALL of the following areas:

A range of Web Services and APIs (XML/REST) are available to enable Symology to interface with corporate systems:



The ability to manage all of these business areas provides Local Authorities with the opportunity to make considerable cost and efficiency savings. This is achieved by streamlining operational practices and reducing the number of systems used to manage these areas.

Further significant savings can also be realised, since only one set of interfaces are required to be established and maintained with external and corporate systems.

Detailed Summary of the Service

Symology Enterprise (Cloud Edition) includes:

Products & Services	Included
Software Products	
Street Gazetteer	☑
Street Gazetteer (& ASD) Maintenance & GeoPlace Export	☑
Embedded Mapping (based on ESRI ArcGIS technology)	☑
Asset Register	☑
Network Referencing & Maintenance	☑
Asset Valuation	☑
Lifecycle Planning and Condition Modelling	☑
Condition Survey Inspections	☑
Cyclic Activities	☑
Street Works	☑
Licences & Events	☑
General Maintenance & Works Ordering	☑
Finance Management	☑
Customer Service	☑
Mobile Solution	☑
Integrated Reporting facilities	☑
Other Included Services/Facilities	
Separate Live and Test Environments	☑
Causeway One.Network Interface	☑
Quarterly MasterMap Updates	☑
Integrated Statistical Reporting Facilities	☑
Street Works - Hosted Communications	☑
250GB of disc space for system, database and attachments	☑
Other Options (may be chargeable)	
Environment Options	
Multi-Authority Licence	
Additional Systems	
Enhanced Service Level	

Single Sign-On	
Interfaces	
Works Management Basic Edition (inc. 1 Contractor Interface)	
Works Management Advanced Edition (inc. 1 Contractor Interface)	
Additional Works Management Contractors	
Stores and Stock Management	
External Works Management System Interface	
Customer Service Direct Interface (Incl. IDI, Jitterbit, Customer Notification)	
Customer Service Direct Interface (Web Reporting Portal use)	
Licences Direct Interfacing	
Asset Register Direct Interface	
Corporate Finance Interface	
Street Lighting CMS Integration	
Bespoke Interface Hosting/Monitoring (Not Dev, PM or Implementation) - Small	
Bespoke Interface Hosting/Monitoring (Not Dev, PM or Implementation) - Medium	
Bespoke Interface Hosting/Monitoring (Not Dev, PM or Implementation) - Large	
TomTom API	
Web Portals	
Customer Service Web Reporting Portal (ReportIt)	
ApplyForIt Web Reporting Portal	
ApplyForIt Payment Integration	
ViewIt Web Portal	
ViewIt Diversion Routes	
ViewIt Historic Works	
Bespoke Web Portal	
ItPortal Additional Environments	
It Portal Add-Ons (VIP, Additional Languages, etc.)	
Map Sharing	
Map Sharing	
Corporate GIS Integration (WFS) publication	

Reporting	
Advanced Reports Licences	
Data Download	
Data Warehouse	
Bespoke Reporting Package - Small	
Bespoke Reporting Package - Medium	
Bespoke Reporting Package - Large	
Enhanced Reporting – Small (per org. Excel Uploads, dashboard creation, embedded designer)	
Enhanced Reporting – Medium (per org. Excel Uploads, dashboard creation, embedded designer)	
Enhanced Reporting – Large (per org. Excel Uploads, dashboard creation, embedded designer)	
Symology Maintained Reports	
Options	
Publicly Hosted Attachment Service for Street Works	
Mobile Routing Facilities	
DTRO 3 (Consuming – D-TRO Map Layer + Enquiry)	
DTRO 4 Publishing TTROs (includes consuming)	
DTRO 5 Publishing TTROs + TROs (includes consuming)	
Street Gazetteer (& ASD) Maintenance & GeoPlace Export	
Import/Export of Datasets (FTP)	
Additional 25GB disc space per annum	
Bespoke Configuration Requirement – Small	
Bespoke Configuration Requirement – Medium	
Bespoke Configuration Requirement – Large	
Initial Mandatory Services	
On-boarding	☑
Project Management (Fixed Price) – Org's with Network >= 2400km	☑
Project Management (Fixed Price) – Org's with Network < 2400km	☑
Implementation Consultancy (Fixed Price) - Org's with Network >= 2400km	☑
Implementation Consultancy (Fixed Price) - Org's with Network < 2400km	☑
Other Optional Services (may be chargeable)	

Street Works Data Migration Service	
Ordnance Survey MasterMap Updates	
Test System Refreshes	
Gazetteer Loads (per year per Authority Area)	
Standard Training Courses at Symology Offices (per person per day)	
Standard Training Courses delivered on-site (1 day course)	
Standard Training Courses delivered on-site (2 day course)	
Remote Training Courses	
Online E-Learning Courses	
On-site Consultancy Services (per day)	
Office based Consultancy Services (per day)	
System Analysis/Design Services (per day)	
Development/Programming (per day)	
UKPMS/PAS 2161/Asset Valuation Bureau Service – Bronze	
UKPMS/PAS 2161/Asset Valuation Bureau Service – Silver	
UKPMS/PAS 2161/Asset Valuation Bureau Service – Gold	
UKPMS/PAS 2161/Asset Valuation Bureau Service – Platinum	
Symology Online Service Package – SP5	
Symology Online Service Package – SP10	
Symology Online Service Package – SP15	
Symology Online Service Package – SP20	
Symology Online Service Package – SP25	
Symology Online Service Package – SP30	
Symology Online Service Package – SP35	
Symology Online Service Package – SP40	
Symology Online Service Package – SP50	
Symology Online Service Package – SP60	

*version dependent

Functional Benefits

Improve Road Condition and Tackle Backlog

Aurora offers a comprehensive solution for the management of highways and infrastructure assets, assisting Councils in effective network management to improve conditions and tackle maintenance backlog. By integrating asset management, maintenance scheduling, and project delivery, Aurora provides a holistic approach to addressing road maintenance needs. With its integrated mapping and reporting capabilities, users can visualise the condition and occupancy of the network, identify areas of high priority, and allocate resources efficiently. Additionally, Aurora's ability to track and manage maintenance activities, including planned and reactive maintenance, ensures that all work is recorded and accounted for in line with the associated priorities, reducing the level of maintenance backlogs. These facilities enable the Council to make informed decisions about resource allocation and budgeting.

Deliver Transparency and Accountability through Comprehensive Reporting

Aurora's comprehensive reporting capabilities enable the Council to deliver transparency and accountability in the management of highways and infrastructure assets. With its ability to provide real-time visibility into asset condition, maintenance activity status and inspection completion in relation to due dates, Aurora ensures that all stakeholders have access to accurate and up-to-date information. This transparency enables the Council to demonstrate accountability and provide assurance to citizens and stakeholders that assets are being maintained to an appropriate standard and resources are being utilised effectively. Aurora's reporting capabilities facilitate the tracking of key performance indicators (KPIs), allowing the Council to measure and evaluate the effectiveness of its maintenance and inspection programs, identify areas for improvement, and make data-driven decisions to optimise resource allocation and budgeting.

Best Practice Asset Management Approach via Risk-Based Delivery

Aurora enables councils to adopt asset management best practice in line with the Well-Managed Highways Infrastructure Code of Practice by providing a comprehensive framework for asset management. The solution includes pre-defined asset types and attributes, aligned with industry best practice, allowing the capturing and management of asset information in a consistent and standardised manner. A risk-based approach is easily accommodated through automatic priority assignment based on pre-determined conditions, facilitating automated progression of activities. Additionally, Aurora's ability to define and track key performance indicators (KPIs) and metrics, such as condition assessments and maintenance schedules, enables councils to demonstrate compliance with the Code of Practice. By adopting Aurora's asset management best practice, councils can benefit from improved asset condition, reduced maintenance costs, and enhanced public safety, ultimately leading to a well-managed and sustainable highway infrastructure network.

Embrace Innovation and Technology

Aurora enables councils to embrace technology and innovation in the management of highways and infrastructure assets. With its integration of industry-leading mapping, integration and reporting capabilities, Aurora provides a platform for councils to leverage emerging technologies, such as artificial intelligence and machine learning, to enhance asset management practices. By utilising Aurora's flexible and adaptable framework, councils can incorporate new data sources, such as sensor data and IoT feeds, to inform decision-making and optimise maintenance activities. This enables councils to stay ahead of emerging trends and challenges, improve operational efficiency, and ultimately deliver better services to citizens, while also reducing costs and improving processes.

Minimise Disruption and Improve Coordination

Aurora helps councils to plan and execute activities efficiently, in order to minimise disruption and improve coordination on the network, thus reducing the likelihood of disruptions to traffic and services. Aurora facilitates collaboration and communication among stakeholders, including contractors, utility companies, and other external partners, ensuring that all parties are aware of planned activities and can plan accordingly. Automated conflict checking facilities of all network occupancy leads to improved coordination, with the ultimate aim of reducing congestion, and minimising disruption to road users.

Increase Customer Satisfaction

Aurora enables councils to increase customer satisfaction through the provision of a comprehensive platform for managing customer enquiries, defect reports, and applications, including third-party insurance claims. The solution offers a multi-channel support system, allowing customers to report issues through various channels, and automated routing and prioritisation of cases ensures that issues are addressed in a timely and efficient manner. With Aurora's real-time reporting and tracking capabilities, councils can provide customers with accurate and up-to-date information about the status of their report, improving transparency and trust. This leads to increased customer satisfaction, as customers can see that their issues are being taken seriously and addressed promptly, ultimately enhancing the overall quality of service and building trust in the council.

Channel Shift Efficiencies

Aurora introduces efficiencies into a council by streamlining processes and automating tasks related to highways and other infrastructure assets. With its integrated platform, councils can reduce manual data entry and administrative tasks, freeing up staff to focus

on more complex and high-value activities. Map-based, public-facing web portals provide self-serve tools for members of the public and other stakeholders for the reporting of defects, assessing impact of road works and other network activities and to apply for licence applications. Two-way integration ensures the all-important status updates back to the reporter or applicant, minimising repeat contact to the council. Comprehensive reporting and analytics tools enable the identification of trends and patterns, allowing councils to make data-driven decisions, optimise resource allocation and further automate workflow. Fully utilising Aurora's workflow capabilities, councils can reduce costs, improve productivity, and enhance the overall quality of service to citizens.

Software Product Descriptions

At Symology we operate with a continuous improvement policy, meaning our enhancements and developments never stop. As a result, whilst the following product descriptions are intended to provide a descriptive overview of the solution areas available, there may be version dependent differences, that are not considered wholesale, at any point in time.

Street Gazetteer

The Street Gazetteer forms a central hub of Symology, providing a network referencing system that is used throughout.

Symology provides proven BS7666 National Street Gazetteer Level 3 compliance. A single-step process will import a Level 3 gazetteer, providing a simple method of populating the Street Gazetteer and linking the Symology database entities to the embedded mapping system where required.

The Associated Street Data; Ownership, Interested Parties, Reinstatement Designations, Special Designations and Height/Weight/Width Restrictions, can all be managed and maintained in the Street Gazetteer. The “uncoupled ASD” or combined ASD provided by Network Rail, TfL, National Highways and Welsh Trunk Roads can also be imported.

Spatial areas or groups provide a sophisticated method of defining any required geographical area, “patch” or “zone”, presenting tailored views and visibility of activities within a pre-defined area. These geographical areas can be used to define Wards, Inspector Routes or Patches, Divisional Areas, Political or Organisational boundaries. Spatial areas or groups can be used to combine Street, Network or Asset entries, which the user wishes to group together.

Street Gazetteer (& ASD) Maintenance & GeoPlace Export

A comprehensive suite of tools are provided for maintaining a Level 3 National Street Gazetteer. This includes the option to import OS MasterMap data and use it as the basis for maintaining the spatial data element of the Gazetteer, whilst at the same time having the ability to manage the data sets using local knowledge.

Associated Street Data, such as Reinstatement Designations and Special Designations can also be plotted (manually or in bulk-plot mode) and maintained. This includes the ability to define offsets from the road centre line.

The files for NSG Level 3 and ASD data submission can be exported with a single-step-process in a format ready for delivery to the NSG Custodians.

Symology’s approach is to provide a separate Symology database for Gazetteer Maintenance purposes. This ensures that changes being made in-between submissions to

GeoPlace are not reflected immediately in the live operational database, which would lead to the Local Authority and Utilities operating on different data sets for Street Works purposes. As part of this approach the gazetteer in the live operational database will be updated monthly by Symology's Managed Services Team using the latest Gazetteer and ASD data available via the GeoPlace portal.

It should be noted that as a Change Only Update approach becomes available, this will become the standard method of updating the Gazetteer, where applicable.

Embedded Mapping

Comprehensive mapping functionality is provided within the Symology product suite, utilising ESRI's world-leading ArcGIS products.

These facilities provide, fully synchronised connectivity, with full enquiry and updating capabilities. The embedded functions exploit the full capabilities of web mapping products.

Street Works records can be automatically plotted on the map. Full co-ordination checks are also provided, to pinpoint conflicting works in the same street, vicinity or on diversion routes. Co-ordination groups, particularly significant for traffic disruption at busy junctions, can also be defined. Once plotted, the area is added to the co-ordination checks and warnings raised for any works that are plotted in the area.

Furthermore, facilities are also provided to plot/edit/clear Customer Service Requests, Works Orders/Defects, Licences and Events (such as Road Closures), plus any Asset held in the Symology system such as Street Lights, Bridges/Structures, Grass verges etc.

The synchronicity between the map and the data provides quick, direct access to further detail about selected streets or activities. The dynamic integration between the mapping and data ensures that users can assess activity records and view them spatially at the same time. Users can also run enquiries and display the results on the map on an adhoc, per user basis, where parameters and filters can be defined to display only the records of interest.

Integration with Google Street View is available, enabling users to select a section of a street via the mapping and the Street View will be immediately displayed.

Additional mapping layers, such as Live Traffic, Aerial Photography, Highway Extents, can also be accommodated in order to enhance the decision-making process.

In order to share data, mapping layers can be made available to an external corporate solution, for example, via WFS integration. Such requirements can be discussed with Symology so as to determine the most efficient method.

Asset Register

The Symology Asset Register provides the ability to create a central store of all Highway related Assets. Typically the module is used by Highway Authorities to store Asset data for Carriageways, Footways, Verges, Street Lighting, Bridges/Structures, Gullies, Illuminated and Non-illuminated signs, Street Furniture, Road Markings, but can also be used for Parks and Open Spaces, Playgrounds, Cemeteries, Traffic Signals, Public Rights of Way, Flood Defences, Coastal Assets and EV Charging Points.

The Asset Dictionary is 100% definable; any number of Asset Types, each with an unlimited number of Attributes, can be defined. The Attributes can be customised to your exact data and validation requirements and can be any of the following types:

- ***Checkbox*** - tick box
- ***Codes*** - a set of user definable codes
- ***Text*** - free text
- ***Number***
- ***Integer***
- ***Currency***
- ***Date***
- ***Time***
- ***Email Address***
- ***Phone Number***
- ***QR Code***
- ***Barcode***
- ***Object*** - links to digital files, intended to attach scanned images, photographs, documents or movie files to a record. Any type of file, or URL, may be attached to the record providing that the required software to open the file is available on the User's computer.

Symology provide out of the box Asset definitions for Street Lighting, Bridges & Structures, Drainage, Highways, Green assets, Street Furniture, Traffic Signal, Public Rights of Way, Land & Property and Flood Risk Assets, based on the specifications provided in the required Codes of Practice, such as the Well-Managed Highway Infrastructure - A Code of Practice. The Items, Attributes and Codes created by these definitions can be amended as required.

The Asset Register provides facilities to define a hierarchical representation of different Assets. Typical uses of this functionality include Signs attached to Lamp Columns, Lamp Columns linked to Feeder Columns and Playgrounds linked to Parks.

Powerful enquiry facilities are provided enabling users to quickly identify Assets which meet certain criteria, for example "show me all the Street Lighting columns, grouped by column material type and height".

The results of these enquiries will provide a count of the number of items in each grouping and also a listing of every asset which meets the selection criteria. These listings can then be used to carry out a bulk update of the asset register, create maintenance jobs and subsequent orders, or to create an Asset Group. Asset Groups can then be used for

reporting and bulk action purposes within the system. The results of the enquiries can also be presented via the mapping, with further spatial filtering options.

In addition, the results of the enquiry facility can be exported directly to .CSV, .XLSX and Shapefile, as well as being able to produce quality formatted reports that can include pictures, logos and extracts from maps. The resulting reports can be output as Adobe Acrobat PDF files and automatically e-mailed to other interested parties.

Owing to the integrated nature of the solution, activities such as maintenance and inspections, can be recorded directly against an asset. The comprehensive workflow and the solution integration enables users to be notified of asset related information, such as an asset in a flood risk area, when prompting or recording maintenance against it. Furthermore, facilities are also provided to define automatic updates of the Asset Register following the completion of works.

Network Referencing and Maintenance

Network referencing facilities are provided within the solution where there are many different options in terms of the data that can be stored.

The Street Gazetteer is based on the National Street Gazetteer concept, with one single entry for each Road Name/Locality combination. In addition to the Road Name/Locality/Town/County definition of a road, the Street Gazetteer also allows for access to a road by NSG Reference/USRN, and other user-definable parameters. Having defined a road by any one of these means, a particular location may then be specified by a location description (e.g. O/S No 127), and/or grid reference.

The Street Gazetteer provides a very convenient basis for referencing, particularly for ad-hoc requirements when dealing with members of the public (they are more likely to know the road name/number than any other information).

However, for other purposes it is convenient to consider sections of road which comprise "cuts" or "joins" of Street Gazetteer entries. The Network Referencing facility provides tools to define a Network as "Section Lengths". The lengths can be specified by defining their spatial location, plotting them on a map, which are linked to a Street Gazetteer entry.

Network Sections may be utilised over the base Street Gazetteer, allowing each user to employ the most relevant form of referencing for the job in hand, whilst still retaining overall compatibility between all the data held within the system.

Network Maintenance facilities enable Networks to be defined with the required information, using both standard UKPMS attributes and user-definable attributes where required, and plotted using the embedded mapping facilities.

For each Section defined in the system, the user is able to hold Section related information such as the Network it belongs to, Section Length, Section Start Chainage, Section End Chainage, Section Reference, Date Opened, Speed Limit, Inspection Category, Road Type,

Road Hierarchy, Urban or Rural Indicator, whether it is a Nominated Section etc. These parameters are used when carrying out UKPMS/PAS 2161 processing.

Asset Valuation

Symology's Asset functions provide comprehensive facilities for the storage and maintenance of all infrastructure assets. Included Asset Valuation tools strengthen the benefits of a single integrated Asset Register by providing a transparent and auditable mechanism for valuing assets in accordance with nationally published guidelines.

The Asset Valuation facilities include, but are by no means limited to, the calculation of Gross Replacement Cost (GRC) and Depreciated Replacement Cost (DRC) and storing these against the assets.

GRC and DRC values are calculated via different methods dependent on the asset type, which include, but are not limited to, straight line depreciation calculations and data input into the Structures Asset Valuation Investment (SAVI) Toolkit.

For more complex Asset Valuation outputs, these can be included in the Bureau Service option detailed below.

Once Asset Valuation values have been generated and stored against the asset, historic values can be displayed to show the change in valuation over time, presenting users with a comprehensive history of each asset.

Lifecycle Planning and Condition Modelling

Symology's approach to asset lifecycle planning and condition modelling extends beyond standard UKPMS. It takes into consideration PAS2161 and the use of AI, whilst retaining the basic requirements of DfT UKPMS. In built tools alongside Symology's Bureau Service provide a practical, powerful and easy-to-use approach to Infrastructure Asset Management.

For organisations choosing to continue with UKPMS modelling, the Bureau Service uses the latest UKPMS Rules and Parameters, but multiple user-defined rule sets can also be created easily, to cover the requirements of all assets. All types of survey data, both national standard and locally-defined, may be processed to ascertain asset condition and determine recommended treatments. Each individual asset treatment is evaluated in cost/benefit terms to establish "Best Value" priorities. A combination of condition history and life deterioration models are used to predict future trends and different budget scenarios may be compared in relation to achieving required service levels. The information produced is presented via sophisticated map-based display techniques, alongside other asset data, to greatly assist understanding and the presentation of recommended actions.

The Interactive Scheme Design function allows treatment recommendations to be progressed into designed schemes. For items where a scheme is not yet appropriate,

workbank items can be created, which can later transition to a scheme for progression. Linking into maintenance activities or workbank items, treatment costs can be derived from actual rates held in the system, allowing accurate scheme costing and budget control. Owing to the links, maintenance programmes, professional quality bills of quantities and works orders may be produced directly from the schemes.

Condition Survey Inspections

Effective Asset Management requires an accurate and detailed assessment of the condition of all parts of the asset base. The Condition Survey Inspections function provides a means of defining the condition data required, and then collecting and storing it for analysis.

Symology accommodates all types of condition survey data for highways, street lighting and bridges/structures. To achieve this flexibility, the different formats in which condition data may be stored are defined using a standard definition, which may be tailored by the organisation to meet each individual requirement.

Many different types of survey inspection may be defined, each with its own set of possible observations and measurements. Standard survey inspection types, including those required for UKPMS highway operations, Street Lighting GN22 and Bridges/Structures Condition Surveys are provided in ready-built form.

Each element of condition data is collected as a result of a survey of a particular Street, Asset or Section. High priority, safety-related, defects which are detected during an inspection can also be processed as work through to Maintenance/Works Ordering for progression.

Much of the data may be collected from visual surveys, normally using mobile devices, but machine testing and AI collection techniques are also accommodated. Survey data can be imported using an industry standard formats in addition to displaying condition via the map.

Cyclic Activities

Within a maintenance environment, there are many activities which are required to be carried out on a cyclic basis. These include:

- Safety & Service inspections in accordance with the document "Well-Managed Highway Infrastructure - A Code of Practice".

- Condition assessment surveys in accordance with the document "Well-Managed Highway Infrastructure - A Code of Practice" and the United Kingdom Pavement Management System (UKPMS) requirements.

- Rolling programmes for preventative treatments i.e. slurry sealing, surface dressing, changing and cleaning of street lights, traffic sign cleaning and weed killing.

The Cyclic Activities tool provides a means of creating, executing, and monitoring a programmed schedule of activities for all these requirements, and many more. Activities may be related to the Street Gazetteer (e.g. a road/street), to a Section or to individual assets which exist within a street (e.g. Lamp Columns).

The frequency of a routine maintenance activity or cyclic inspection is determined by the asset in question; the street, section or asset. Frequency definition includes flexibility for different schedules for different parts of an asset, such as individual components of a street, to enable the management of the asset as a whole.

A "due date" diary system is used to prompt and monitor the programme of Activity Types. Activities due to be performed are downloaded onto Symology's Mobile application, although printed definitions can also be accommodated if required.

Full integration is provided across the Condition Survey Inspections, Cyclic Activities and General Maintenance and Works Ordering functions. Observations and defects detected during cyclic inspections can be passed directly for condition assessment and works ordering, as appropriate.

Cyclic Activities can cover asset inspections such as playground inspections, but also be used to define Cyclic Maintenance work programmes, such as Bulk Lamp Changing, Grass Cutting or Gully Emptying, and facilities are provided to auto-progress activities, and monitor these through to completion. Of course it is also possible to record the fact that an activity has been carried out and that "No Defects" were found.

A full history of completed activities is maintained including cross-references to any recorded defects from an inspection. It is possible to trace the frequency and the dates at which an activity has been performed, who performed it, the work completed or the number of defects recorded on each occasion. The full details of each defect recorded can be accessed, including an event history facility which indicates all actions taken since it was first logged on the system.

Street Works

The Street Works element provides comprehensive functionality for the coordination of all activities which could potentially cause disruption on the highway, including Utility and Highway Authority Works, Highways Act licences, other obstructions on the highway, and special events, such as sports fixtures, carnivals, markets, parades etc.

Both Street Works Notices and Permits are accommodated, and Aurora is compatible with both Street Manager in England and EToN in Wales. The system has powerful coordination facilities built in to provide the Traffic Manager with full control of all works, submitted as either Works Notices or Permit Applications. As an Activity is recorded,

whether by an incoming notice, the Council's own Works Department, a Highways Act licence application, or a special event, the Traffic Manager is immediately able to review potential conflicts, using both the embedded GIS facilities and the works details. Potential conflicts are shown where works with overlapping dates occur in the same street, within the vicinity of other works, diversion routes and in defined Co-ordination groups.

Statistical analyses of performance, over specific time periods, are available as required. However, the unique benefit of Symology is the wide range of flexible, in-built enquiries, providing instantaneous exception reporting. The enquiries are user configurable, without technical assistance, with immediate onscreen or printed output.

Sophisticated reporting tools are provided, which provide all the exception reports required to monitor the progress of Street Works Notices, Permits, Inspections and Fixed Penalties. The results of these enquiries can be exported in CSV, XLSX and Shapefile format. Symology accommodates all the various mechanisms that are used to provide the incentive for speedy and efficient completion of works, such as street occupancy/lane rental, overstay charging, and remedial works or inspection failure penalties.

All of these options are provided, in addition to charging policies for notices/permit applications, lane rental, overstay, Fixed Penalty Notices and statutory inspections. An integrated charging function, with manual adjustment facilities, enables street authorities to produce accurate, substantiated invoices, and helps works promoters monitor and minimise costs.

In order to integrate with the Department for Transport's Street Manager solution in England, an interface can be used to send and receive Street Works notices and permits from and to the Aurora solution. This seamless integration between Symology's Enterprise solution and DfT's Street Manager solution, provides an Authority with full Street Works and Licences & Events functionality whilst ensuring that Street Manager is updated in accordance with the latest legislation and Codes of Practice.

Licences & Events

The Symology Licences & Events function provides powerful facilities which enable all the co-ordination, control, safety, network planning and financial issues that surround licence applications and other events on the public highway to be managed effectively. Facilities also include the ability to record road closures and associated diversions, with integration to the Digital Traffic Regulation Order (D-TRO) service, where applicable.

All types of licence can be accommodated by the system, including but not limited to, skips, scaffolding, Section 50 and events, and a comprehensive range of parameter options are provided. User-definable documents, charging options, and timescales, for each type of licence, ensure that all varying requirements can be met.

The solution includes charging for licences, enabling combinations of deposits, initial charges, and extension charges, etc. Invoices for charges due, can be raised for issue, to either the applicant or hire company involved. Where an applicant may require more time

than on the initial application request, licence extensions can be accommodated, along with any associated charging implications.

The inspection prompting system enables technicians to check and record that the licensee is compliant with the terms of the licence agreement and/or that the site has been left in an acceptable condition prior to the release of the deposit. Licence information is available via the Aurora app, against which inspections can be recorded. Additionally, enforcement issues, such as unlicensed skips, can be recorded via the app for follow-up.

Under the Traffic Management Act onus is placed on Local Authorities to record Highway based licences on the Street Works Register. Symology seamlessly integrate these two records within Symology, ensuring that the Street Works Register accurately reflects the current status of the Highway based licence.

The D-TRO service is an API only service and packages are available for combinations of publishing and consuming D-TROs in line with customer requirements utilising the Bespoke Interface options, the package definitions are detailed below.

D-TRO 3 (Consuming – D-TRO Map Layer + Enquiry)
This option provides the display of al published D-TROs via a mapping layer for visibility of all D-TRO records in addition to a D-TRO enquiry to report on all consumed D-TROs.
D-TRO 4 Publishing TTROs (includes consuming)
This option includes all facilities in D-TRO 3 and provides the ability to create, manage and publish TTROs to the D-TRO service.
D-TRO 5 Publishing TTROs + TROs (includes consuming)
This option includes all facilities in D-TRO 3 and D-TRO 4 in addition to the tools to create, manage and publish TROs.

General Maintenance and Works Ordering

These Symology solution functions provide a uniquely powerful system for the definition and management of works on highways and other infrastructure assets. The types of work may be very varied; from major asset improvement schemes to relatively low cost works such as ad-hoc safety defects and preventative maintenance.

The contracts which are used to encompass these works are correspondingly varied. Symology uniquely covers all normal contractual terms, enabling administration and progressing of works with a minimum of effort. A wide range of functions exist for monitoring contractors' performance in meeting demands, and for checking work quality. Full multiple contract facilities enable special schemes to be set up as separate contracts, with a separate schedule of rates if required. This allows different conditions to the standard "term" contracts and avoids dangers of scheme work being confused with routine works. There is no limit on the value and complexity of orders which can be produced from the solution.

Each work record which is created within the solution is allocated a unique reference number (Activity Reference). The Activity Reference record may contain work specified by means of many schedule codes and related quantities/dimensions. The subsequent ordering processes will create orders either with one Activity Reference per order (Single-Job Order), or with many Activity References combined on an order (Multi-Job Order).

User-defined finance codes may be employed for exercising financial control. Sophisticated facilities for budgeting, linked with automated commitment and expenditure tracking, provide instant management information. User authority levels are used to maintain security on order and invoice approval. Integration with corporate financial systems can be facilitated via either the production of a standard expenditure interface file or a corporate finance interface.

The solution design simplifies the recording of maintenance activities against a street, section or asset, ensuring a full audit of actions against any type of infrastructure asset. Recording Maintenance activities in association with an established Asset Register clearly provides many advantages. In particular, it allows more precise identification of work to avoid duplicate ordering, highlights recurring problems, and permits the recording of "life history" of defects/treatments.

The General Maintenance facilities allow for specifying work requirements, selecting contractors, post-order monitoring, and inspection recording, in addition to producing orders and recording completion of work.

One of the key requirements from the Traffic Management Act is that Local Authorities are required to register their own works on the Street Works Register, together with co-ordinates.

The performance of Local Authority Works Promoters in complying with the Street Works Noticing Rules are measured nationally either via a central solution or via national reports, which are location specific. Where required, performance reports can be produced from within the solution.

Aurora simplifies the creation of associated Street Works, additionally linking the notice or permit application to the maintenance activity. Owing to this link, the Street Works record is automatically updated as the maintenance work progresses through its natural lifecycle, sending updates in the appropriate format.

Finance Management

Aurora's Finance Management features include the handling of contractor invoices, matched with the original order, and controlling the processes for approval of the claim, be it manual or automated.

A contractor's claim may be entered manually or received electronically from a third-party contractor system or from the Works Management function (see below). The solution can also be set to highlight significant differences between orders and invoices, enabling staff to focus on the more contentious claims.

The management of claims can be simply facilitated via enquiries and dashboard reporting, as well as via automated workflows where required. Claim issuing for interim, final and supplementary claims are accommodated, as well as facilities for credit notes.

Part-payment may be authorised and, if required, a defined proportion of the approved claim kept in retention. Payment certificates may be produced for approved amounts, in the required format. A full audit trail of claims and approvals is provided, together with all other related events in the life of the works, such as orders, variations and inspections. This enables contractors' queries on the progress of claims to be answered quickly and easily.

Customer Service

An important part of Highway Asset Management is the recording of Customer Service requests and progressing these through to clearance. The Symology Customer Services facility provides a single central function which will deal with all infrastructure assets, and offers unrivalled flexibility to allow for the different work practices of organisations and individuals.

User-defined Case Types, Priorities and Additional Field Codes can be used. Automated lifecycle actions may be initiated for each Case Type, including assignment to officers, document production, and time-based escalation in accordance with corporate policy. Requests can be progressed for inspection, and linked to maintenance activities. In both these cases, it is possible to optimise the workload together with requirements which arise from other sources.

Additional fields can be defined, enabling users to collect any other information regarding the customer or enquiry. This includes multimedia objects, such as photographs, videos and scanned documents. All recorded information is available for analysis and the production of statistics, using standard enquiry and reporting tools.

Embedded email and document creation facilities allow the automatic production of emails, standard letters and bespoke documents both manually and automatically as part of a defined process. Embedded GIS facilities provide immediate access to a map of the area being referenced, both to assist in locating the appropriate street or inventory items, and for plotting the location of the query being raised.

Customer Request data may be imported electronically from corporate CRM solutions, public facing web portals or online forms. This enables members of the public to raise issues online, and also enables other departments within the authority to transfer requests.

Mobile Solution

The mobile app combines unparalleled software functionality, together with the latest technology and communication options. All the requirements for multi-disciplined inspectors are provided within a single, easy to install application. The software, which is wholly developed by Symology, offers guaranteed compatibility with the following:

- Street Gazetteer
- Customer Service
- General Maintenance/Works Ordering
- Works Management
- Cyclic Activities
- Street Works
- Condition Survey Inspections
- Asset Register
- Licences & Events

No set-up work is necessary on the mobile devices; simply downloading the app ensures that the devices will "auto-program" based on a user's role-based permissions.

Once downloaded, the app requires no further "back-office" intervention as the upload/download of data is automated as well as the ability for a manual sync by the remote operative at any time.

The app is designed to work without the requirement for an "always-on" connection, facilitating offline working as needed. Data is sent and received between the Symology solution and the app using REST API technology. So long as the app can connect to the internet, be it by 4G, 5G or Wi-Fi, then data can be exchanged.

All types of inspections and condition survey inspections are accommodated, as well as the ability to record defects found as a result of an inspection or any ad-hoc defects that are encountered. The types of inspections and condition surveys that can be accommodated by the app range from industry standard to locally defined activities, including but are not limited to:

- Highway Safety and Service Inspections
- Street Works Inspections
- Customer Service generated Inspections
- Post Work Quality Inspections
- Measure Inspections
- UKPMS CVI, DVI Inspections
- Street Lighting Electrical Test Surveys
- Bridges/Structures – General and Principal Inspections
- Pre or Post Inspections of the Highway for non-work Highway Activities.

It should be noted that some inspections may require bespoke configuration to meet local requirements. Symology can provide guidance on where additional configuration may be required.

On-going works-in-progress (including Utility Works) can also be viewed on the app based on the user's permissions. These facilities enable the inspector or operative to check the status of records (and update if necessary) that are currently "on-going" and have already been recorded in the central Symology system.

In addition to the above, the app also provides the capability to collect new asset data, or download existing asset data and carry out updates.

If the Works Management (Basic Edition) is being utilised by the Contractor then the app can be used by the gangs to receive allocated works, record status updates, record audited messages with associated photographs, send Street Works start/stop notices and record completed works details. The app can also allow the gangs to record the labour, plant and materials usage for a given job.

The mobile mapping facilities may be used to select and update existing records as well as for plotting (points, lines and polygons are all supported) the location of new defects, assets etc. Any changes to the representation of existing spatial entities or newly created records with a spatial representation are automatically GIS-linked when uploaded to the central Symology system.

GPS location services can also be used to ensure that the map is centred on the operative's current location. Photographs can be taken and attached to records, and even digital objects already associated with an existing record on the central system can be downloaded to the device whilst out on-site. A route optimisation facility can be added to allow the inspector/gang to optimise the route and coordinate different activities to ensure maximum efficiency when on-site.

The app is optimised to operate on Tablets and Mobile Phones running Android and iOS.

Integrated Reporting Facilities

Three levels of enquiry and reporting are available within Symology, each related to the needs and relative skills of different users.

A vast range of live, dynamic enquiries are available throughout, to cover operational requirements, each of which provides selection criteria and allows the results to be filtered as required. Further facilities are provided to define the precise data fields to be displayed alongside configurable highlighting rules. Column sorting, multi-level grouping and in-context instant filtering can also provide additional tailoring. These user defined views can be saved and set to be that user's (or groups of users') default view for repeated use. Typical enquiry uses cover due permanent reinstatements, overdue activity closures and outstanding defects, providing Authorities with tools to comply with their statutory obligations.

Data exporting options allow the results of enquiries to be exported in CSV, XLSX and Shapefile format alongside facilities to produce reports in XSLX, DOCX, PDF and CSV format. More complex specific bespoke reporting requirements can be discussed with Symology to determine the most appropriate method.

An extensive suite of out-of-the-box dashboards are included as standard for all users, some are aimed at monitoring high level key performance indicators whilst others are provided to assist in driving operational workflows. Direct drill down to the supporting data records is provided with all dashboard widgets.

Where there are requirements that cannot be accommodated by the above options, a data download or data warehouse option is available.

Where applicable, the reporting facilities can be used by all customers, however in order to define report templates, the Enhanced Reporting option must be selected or consultancy is required. It should be noted that standard report templates are included, such as a claims report, works report and job ticket templates.

Other Included Services/Facilities

Live/Test Systems

Each customer will be provided with two systems– Live and Test.

The Test system will be a data-lite version of the Live system and is commonly used to review new facilities in order to incorporate them into business processes and operating procedures with a view to maximising their benefit. In addition, to train end-users, familiarising themselves with exciting new facilities and enhancements.

Test System Refreshes

The test system can be refreshed with data from the live system upon request (see Options below for any data refreshes).

Causeway One.Network Interface

Where required, a Causeway One.Network interface can be set-up and maintained so that Street Works data from the solution can be fed into Causeway One.Network. This service includes the set-up and maintenance of the interface by Symology.

For England, Symology consumes the available Street Manager Open Data for inclusion within the solution for co-ordination and conflict checking purposes, particularly for activities impacting a Council's boundary.

OS MasterMap Updates

As part of the standard service, Ordnance Survey MasterMap layers are kept up-to-date via an interface to an ESRI ArcGIS Online Mapping service.

SQL Server Data Store for Statistical Reporting

As part of the standard service, Symology will download data required for statistical reporting purposes (such as the nationally agreed Street Works Performance Indicators where applicable) into a separate SQL Server RDBMS.

Street Works – Hosted Communications

Where required, Symology provide and manage all of the necessary technical facilities for the sending/receiving of Street Works EToN transactions.

Disc Space

A burstable limit of 250 GB of disc space is provided as part of the standard service. This amount of disc space should prove to be more than sufficient for most customers (even large County Councils). However, if more disc space is required this limit can be burst

through automatically. In such circumstances the Symology Managed Services team would contact the customer to ascertain whether additional disc space as required on an on-going basis (please see Other Options below).

Other Options (may be chargeable)

Multi-Authority Licence

The Symology solution can operate as a multi-Authority solution enabling it to be used as a national solution or as a multi-Authority solution (Bi-Borough/Tri-Borough). Aurora contains appropriate rules to define access and authorisation as standard to ensure effective operation across these models, which have been successfully in operation across Symology's customer base for a number of years.

The configuration for access and authorisation coupled with defined spatial areas guarantee visibility of the correct activities including the ability to manage or progress those activities for that user role.

Additional Systems

Whilst Live and Test systems are provided as standard, additional Production and Sandbox systems can be made available as required and will be a cut down version of the Live environment.

Enhanced Service Level

Symology has a standard Service Level applied to the solution, which is detailed in Section 20. Where the customer requires an enhanced level, this option should be selected.

Single Sign-On (SSO)

A Single Sign-On option can be added to the solution on a per Organisation basis. Where Single Sign-On is added, Users receive an activation email following the creation of their account and can log in to the solution using their existing credentials.

Works Management Basic Edition (Incl. 1 Contractor Interface)

Works Management Basic Edition is designed to provide facilities for Contractors within Symology. The intimate integration between the Client and Contractor functions enables all applicable data and system facilities such as the Street Gazetteer, Asset Register, Mapping functions, reporting tools, etc. to be utilised by both parties - enabling operational efficiencies to be gained.

Sophisticated user permissions (based on Contract/Contractor combinations) can be utilised to ensure that Clients and Contractors both have their own discrete view of the system.

The Works Management function allows Contractors to receive Works Orders electronically from the Client - removing the need for external interface files, paper orders and claims, and the re-keying of data into other systems.

Works Orders received can be split down into component parts, as required, and then manually or automatically (in accordance with user-defined rules) be allocated to work gangs.

To meet the TMA requirements, the link into Street Works alongside standard reporting and mapping display enables Contractor Managers and Supervisors to visually take into account available labour resources and TMA noticing rules at the same time. Additionally, as works are being scheduled, the user is also made aware of potential conflicts with any other on-going works.

High quality job tickets can be produced in printed form, or works can be downloaded onto the app – enabling the gangs to receive allocated works and progress them through to completion.

Street Works Notices, such as Works Start and Works Stop are also automatically generated as work is progressed through its natural lifecycle. These can be generated by the gang whilst on-site if the app is being used and the necessary communications are in place.

Facilities are provided to allow the Contractor to record the status of the work at any point in time and send messages to the client along with attachments. Similarly the Client can send messages and attachments to the Contractor.

The Contractor can enter interim or final completion details for the works including, schedule code details, additional extras and lump sum amounts with associated descriptions. An additionally charged standard API is available to import Schedule Completion details from third-party Contractor systems. These facilities are likely to prove useful to customers who wish to integrate Symology Works Management with other third-party contractor systems.

The production of financial claims is automatically built-up from the works completion details. The Contractor can then choose to send Interim/Final/Supplementary claims individually or in batch.

Resources are the items that are used when carrying out works i.e. the Labour, Plant, Materials and possibly other services used. Symology allows any number of Resources to be defined within the system. Resources are defined with a Version number; this ensures that the system is capable of maintaining and utilising multiple versions of the Resources as they increase/decrease over time in-line with inflation and contract conditions.

Once resources have been defined in the system they can be used to record everything that was required to perform a piece of work. Resource Usage can be entered against individual Jobs or Activities. The Resource Rates version can be automatically selected based on the date used.

Resources can also be used to calculate the claim value of Dayworks based Activities and/or provide internal costs for all types of work. Furthermore, they can also be used to provide a more detailed breakdown of ordered schedule codes in order to calculate expected costs, resource requirements and calculate target times and the value of works in progress.

Works Management Advanced Edition (Incl. 1 Contractor Interface)

The Advanced edition of Works Management includes all of the facilities provided with the Basic Edition, but with the following additional functionality:

- Graphical Scheduling tool for planning and allocating activities
- Gang resource management for time categorisation, reporting and analytics.

The additional contractor and works management facilities within the Advanced option, provide enhanced tools for the planning and allocation of activities, such as jobs, in addition to enhanced options for the operational management of gangs.

Additional Works Management Contractors

The Works Management options outlined above include a licence to operate with 1 contractor. If the customer wishes to use Works Management with more than 1 contractor then an additional charge applies per additional contractor.

Stores and Stock Management

Aurora's stock management features include real-time visibility, automated notifications, and approval processes for placing stock orders. Users can place orders using mobile or desktop devices and view stock levels, location, and specifications. The system also allows for file attachments and updates stock levels when items are returned. Additionally, Aurora includes standard reporting facilities, including a stock usage enquiry, and integrates with other financial systems.

External Works Management System Interface

This option, which is charged on a per contractor basis, applies if the customer wishes to integrate their Symology system with an external third-party Contractor system. A standard interface is available which provides the capability to send electronic works orders and receive back electronic work status updates and financial claims/invoices.

The charge for this option includes the licensing of this interfacing capability and all Symology costs involved in setting up and monitoring the interface is working on an on-going basis.

The charge for this option does not include any assistance that may be required from Symology by the third-party system suppliers in understanding how to use the standard

interface or to provide any assistance with testing the interface. Any such requirement would be charged at normal service rates (see below).

Customer Service Direct Interface

Symology can provide the “Customer Service Direct Interface” which is designed to allow other applications to interface directly with the Symology Customer Service function, in real-time. It is aimed at receiving data from "trusted sources" which can be recorded directly into the Aurora solution, without any form of review by an Symology user. Primarily the solution is targeted at interfacing with Corporate CRM systems.

The “Customer Service Interface” operates as a REST API, facilitating the sending of request details, actions and events relating to existing requests and to get full request details and history for existing requests.

The charge for this option includes the required software products, the set-up and ongoing monitoring of the products and assistance with implementing customer notifications by e-mail or data feedback to the third-party system.

The charge for this option does not include any assistance that may be required from Symology by the third-party system suppliers in understanding how to use the standard interface or to provide any assistance with testing the interface. Any such requirement would be charged at normal service rates (see below).

Licences Direct Interfacing

The Licences Interface option provides the capability to receive applications for Licences (such as Skip and Scaffold Licences) into Aurora in real-time using a REST API.

The charge for this option includes a combination of software charges plus technical set-up and monitoring of the interface.

The charge for this option does not include any assistance that may be required from Symology by the third-party system suppliers in understanding how to use the standard interface or to provide any assistance with testing the interface. Any such requirement would be charged at normal service rates (see below).

Asset Register Direct Interface

Symology can provide the “Asset Register Direct Interface” which is designed to allow other applications to interface directly with Symology’s Asset Register, in real-time. It is aimed at receiving data from "trusted sources" which can be recorded directly into Aurora, without any form of review by an Symology user.

The charge for this option includes the required software products, the set-up and ongoing monitoring of the product.

The charge for this option does not include any assistance that may be required from Symology by the third-party system suppliers in understanding how to use the standard interface or to provide any assistance with testing the interface. Any such requirement would be charged at normal service rates (see below).

Corporate Finance Interface

Symology provides a wealth of standard facilities which are used to manage and monitor finance. These range from the management of budgets, works orders and recharges for Maintenance jobs, to facilities in Street Works and Licences to generate charges, deal with deposits etc.

This option provides the customer with the capability of interfacing Symology with their corporate finance system. There are two options that can be facilitated, integration via a REST API and a finance extract.

For the finance integration via API, financial transactions managed within Symology can be reflected in the corporate finance system. Additionally, the corporate finance system can request financial updates from Aurora at any time.

The charge for this option includes the required software products and the technical set-up and ongoing monitoring of the interface.

Symology provide a standard interface format, however this may be required to be modified to suit the specific corporate system being interfaced with. The costs for modifying the standard interface format are not included within this option – any such requirement would be charged at normal service rates (see below).

For a more static, scheduled finance integration approach, a Corporate Finance Extract can be utilised to reflect financial transactions in a corporate finance system. This is delivered via a one-way transaction, updating the corporate finance system from Aurora.

Symology provide a standard format, however this is typically required to be modified to suit the specific corporate system being interfaced with. The costs for modifying the standard interface format are not included within this option – any such requirement would be charged at normal service rates (see below).

Hosting/Management of Street Lighting CMS Interface

This option provides the foundations for integrating Symology with a Street Lighting Central Management System (CMS). The level of integration possible is:

- Export of Street Lighting Assets held in Symology into the Street Lighting CMS
- Receive automatic fault reports from Lighting Units i.e. “Failed to Strike” directly into Aurora Customer Service.

The software charges associated with this interface will need to be ordered outside of the G-Cloud. However, this option will also be required to be ordered in order to cover for the set-up, hosting and ongoing monitoring of the interface.

The charge for this option does not include any assistance that may be required from Symology by the third-party system suppliers in understanding how to use the standard interface or assistance required to tailor the interface to a specific CMS system. Any such requirement would be charged at normal service rates (see below).

Bespoke Interface Hosting/Monitoring – Small, Medium or Large

Due to the breadth and sheer versatility of the Symology product range there is occasionally a requirement for an interface which is not provided "off-the-shelf" as a standard product. This option is therefore provided to cover for any unforeseen or bespoke interfacing requirements which may arise.

Examples of bespoke integration include, but are not limited to, the importing of activities (maintenance or inspections) from external sources and integration with an external Stores solution from Aurora. This option is also used for integration with the DfT Street Manager solution in England.

This option is available at three levels – Small, Medium and Large. Symology will advise the customer as to which level of product should be ordered following an assessment of the bespoke requirement.

The charge for this option includes any required software products, the initial set-up and the ongoing monitoring of the bespoke product.

The charge does not include any requirement for System Analysis, Programming, Project Management or Implementation services. These requirements would be charged at normal service rates (see below).

Live TomTom Traffic API

A Live Traffic mapping layer provided by TomTom is available to include with the solution to enhance decision making.

Customer Service Web Reporting Portal (ReportIt)

Symology can provide a ready-made Customer Service Web Reporting portal which is designed so that members of the public can report issues such as potholes, street lighting defects etc. The web reporting system can be configured such that requests raised are automatically fed into the Symology Customer Service system. This solution includes facilities which show previously recorded service requests on the web mapping portal and the current status of each request. The solution also includes the capability to send e-mails to members of the public at each stage of the lifecycle in order to provide the

customer with feedback. The solution uses an HTML5 based responsive design, which means that the portal can be used on any device (Desktop, Tablet or Smartphone) with a modern web browser. The VIP Option offers the facility to access and distinguish between different groups of users.

It is important to note that the "Customer Service Interface (Web Reporting Portal use)" is required as a pre-requisite for this solution. It should also be noted that Symology's Consultancy Services would be required in order to plan and implement this solution.

ApplyForIt Web Reporting Portal

Symology's ApplyForIt Web Portal solution is designed so that pre-registered Hire Companies or Utilities can apply for Licences from their Local Authority for placing items on the Public Highways including but not limited to Skips, Scaffolds, Building Materials and Temporary Traffic Regulation Orders (TTROs). The solution can be configured such that Licence applications are automatically fed into Aurora. This solution includes facilities which show previously recorded applications on the web mapping portal and the current status of each. The solution utilises Symology's Customer Service and Customer Service Interface to provide the status updates back to the web portal and emails back to the Hire Companies. The solution uses an HTML5 based responsive design, which means that the portal can be used on any device (Desktop, Tablet or Smartphone) with a modern web browser.

It is important to note that the ApplyForIt solution requires Symology's Licences & Events, the Licences Direct Interface, Customer Service and the Customer Service Direct Interface as a pre-requisite. It should also be noted that Symology's Consultancy Services would be required in order to plan and implement this solution.

Payment Integration

Where an online form or web portal is used for licence applications, payment integration can be incorporated into the solution. Symology holds PCI DSS compliance for payment integration with the ApplyForIt web portal.

ViewIt Web Portal

The ViewIt Web Portal solution is aimed at enabling members of the public to view current and future works of their Local Authority relating to, including but not limited to, Highways, Lighting, Structures, Environment and Rights of Way.

A single web page application with integrated mapping, the solution is fully hosted by Symology and implementation requires minimal effort from the Authority. Providing a public device agnostic a solution that utilises the latest OS OpenData mapping data providing an internet mapping experience without any of the data ownership considerations.

Web Portal Additional Options

The Web Portals (ReportIt, ApplyForIt, ViewIt) are designed as standard portals to offer channel shift efficiency savings for organisations. Owing to the design of the portals, additional options such as Diversion Routes and Historic Works can be added to the ViewIt Web Portal, Payment Integration can be added to ApplyForIt, and other Add-Ons such as additional language, all of which are charged separately. Additional Web Portals can also be included as required.

Map Sharing (GIS)

The Map Sharing option provides the customer with the facility to locally consume or serve the mapping layers between the Enterprise solution, for example, in real-time by means of Web Feature Services.

Map Sharing can be facilitated in a number of different ways, where Symology can advise on the most appropriate method for the requirement. The options include the use of a Corporate GIS interface using Web Feature Services (WFS), an ESRI collaboration tool and a layer import/export.

The charge for this option includes a combination of software charges plus technical set-up and monitoring, however configuration is charged separately.

It should be noted that a “fair usage” policy applies to mapping integrations. For example, it would not be deemed fair usage for the customer to have local systems configured to consume Ordnance Survey MasterMap layers on an on-going basis. Where large datasets are required, a Vector Map Tile Service may be utilised as an alternative. A one-off configuration charge and cost per additional layer will apply for this option.

Advanced Report Licences

Each user has the ability to schedule 5 Saved Aurora Reports at any one time for production or issuing via email. The Advanced Report Licences option is a per user option, enabling additional reports to be scheduled for production or email.

Data Download and Data Warehouse

The Symology Street Works solution contains numerous different reporting methods, enabling the vast majority of reporting requirements to be met directly from within the solution.

Customers may require access to data for alternative reporting purposes and Symology can make customers’ data available to them for their own, local reporting purposes. Data can be made available via two options; Data Download and Data Warehouse. The Data Download option facilitates the provision of a download of data on a regular basis, for example nightly. The Data Warehouse option includes provision of a geo-replicated

version of the data for use with external reporting solutions such as PowerBI. These more complex specific bespoke reporting requirements can be discussed with Symology in order to determine the most appropriate method.

Bespoke Reporting Package (Small, Medium, Large)

Whilst the standard reporting options satisfy a large proportion of requirements, the bespoke reporting package can be added to facilitate bespoke reporting requirements. It is common for organisations to require additional reports over and above the standard reports provided, therefore, this option offers the facility for customers to have specific reports written and maintained for them.

The packages are categorised as small, medium and large to cater for the specific requirements and features needed on a per organisation basis.

Enhanced Reporting (Small, Medium, Large)

Whilst the standard reporting options satisfy a large proportion of requirements, the enhanced reporting option can be added to provide further reporting tools.

The packages are categorised as small, medium and large to cater for the specific requirements and features needed on a per organisation basis.

The Enhanced Reporting option provides organisations with enhanced reporting tools over above the standard features of grid enquiries, Saved Views and report scheduling. This option includes three enhanced features; Excel Uploads, Dashboard creation and Embedded Designer.

The Excel Uploads provides users with the option to upload an existing Excel template into the solution including graphs, into which data can be exported to automatically populate the defined template. The Dashboard creation tool provides the option for users to create both their own dashboards and dashboard widgets from Saved Views. The Embedded Designer tools offer the capability to write reports, such as reports in PDF format, for use by any user.

Symology Maintained Reports

Symology's expertise includes report writing and maintenance which can be selected by organisations without the inhouse skills for report writing. The writing of reports is facilitated via the standard consultancy costs, and this option should be selected to maintain these reports in line with any new software updates.

Publicly Hosted Attachment Service for Street Works

With the introduction on EToN 6, the facility to send attachments with notices was expanded to cover a wide range of transactions.

Attachments have to be held on a server, which is accessible by all notice recipients. This in turn implies that it must be established outside the sending organisation's firewall, since for security reasons access will clearly not be allowed inside the organisation's network. Requests to organisation IT departments for this often meets a negative reaction and the costs of setup can be very significant.

This option provides a "one-stop" service, which avoids all technical complexity and cost implication problems for organisations by holding the attachments on the Symology hosted infrastructure, and providing all the related software to enable a complete solution.

Mobile Routing Facilities

Mobile routing facilities can be enabled, providing remote operatives with the most efficient route between their allocated inspections.

D-TRO Packages

The D-TRO service is an API only service and packages are available for combinations of publishing and consuming D-TROs in line with customer requirements. The package definitions are detailed in Section 3.

Street Gazetteer (& ASD) Maintenance & GeoPlace Export

A comprehensive suite of tools is provided for maintaining a Level 3 National Street Gazetteer including the spatial data element of the Gazetteer.

Associated Street Data, such as Reinstatement Designations and Special Designations can also be plotted (manually or in bulk-plot mode) and maintained. This includes the ability to define offsets from the road centre line.

The files for NSG Level 3 and ASD data submission can be exported with a single-step-process in a format ready for delivery to the NSG Custodians.

In order to ensure that changes being made in-between submissions to GeoPlace are not reflected immediately in the live operational system, the Gazetteer Maintenance facilities are provided in a separate database. This ensures that the Local Authority and Utilities are not operating on different data sets for Street Works purposes. As part of the solution provided by Symology, the gazetteer in the live operational system will be updated monthly by Symology's Managed Services Team using the latest Gazetteer and ASD data available via the GeoPlace portal.

Import/Export of Datasets (FTP)

This option applies if the customer has a specific requirement for data to be either uploaded or downloaded on a regular basis.

Example uses of this option may include the regular transfer of mapping layers such that layers maintained locally in a third-party system can be uploaded and displayed within Symology. Or alternatively, the customer wants to download a weekly copy of the mapping layers within Symology so that they can be loaded into local mapping systems.

Whilst the examples above are mapping related, this option can be utilised for any dataset that regularly requires exchanging between local and hosted systems.

Such requirements are normally met by providing Azure Blob Storage In/Out areas. Any regular data extracts would be automated by Symology with the resulting files being placed in the Azure Out folder. Any files being sent by the customer would be uploaded to the Azure In folder, from where Symology would have automated scripts to pick up the files and process them as required.

The charge for this option includes the provision of the Azure Blob Storage In/Out folders, and any scripting work required to process the files as agreed.

It is important to note that this charge applies on a "per instance" basis.

Additional 25GB disc space per annum

This option can be utilised if the customer requires more disc space than that which is allocated with the standard service.

Bespoke Configuration Requirement – Small/Medium/Large

Owing to the vast flexibility of the solution, bespoke configuration requirements can be made and would most commonly be used for more complex solutions whereby the configuration needs to be more tailored to the requirements of multiple teams or departments. Examples of bespoke configuration requirements include but are not limited to:

- The tailoring of mapping layers and definitions
- The configuration of separate contract and contractors
- The creation of local rules and charges at contractor level.

This option is available at three levels – Small, Medium and Large. Symology will advise the customer as to which level of product should be ordered following an assessment of the bespoke configuration requirement.

Initial Mandatory Services

On-boarding

A fixed price will apply to the on-boarding process (see Section 14 below).

Project Management

A fixed price will apply to cover all Project Management activities required from the outset of the Project up to the point of going Live. Symology's Project Managers are PRINCE2 accredited.

Two fixed price cost options are provided for Project Management activities. The higher charge applies to organisations with a total Highway Network length of 2,400km or greater. The lower charge applies to organisations with a total Network length lower than 2,400km.

Implementation Consultancy Services

A fixed price will apply to cover all Implementation Consultancy Services required from the outset of the Project up to the point of going Live.

Two fixed price cost options are provided for Implementation Consultancy Services. The higher charge applies to organisations with a total Highway Network length of 2,400km or greater. The lower charge applies to organisations with a total Network length lower than 2,400km.

Other Optional Services (may be chargeable)

Street Works Data Migration Service

Symology has previous experience with migrating Street Works data from other EToN systems. Our preferred method for migrating EToN data is to be provided with all the EToN XML and Text files since the introduction of EToN 1. Following the introduction of Street Manager in England, where applicable, Symology will back-load the DfT Street Manager data in addition to EToN data. Symology then organise these files into date sequence and load them into the Symology system. If the XML or Text files are not available then we would issue the existing supplier with a specification to output the data in the required formats (basically replicating the data that would have been in the XML and Text files).

When loading the data into Symology, reports are generated to highlight any errors or warnings. Following the first load we would demonstrate to the customer the success (or otherwise) of the initial load, in order that agreement can be reached with regards to amending validation rules for certain scenarios – to overcome any problems that arise.

Following this, we would make the necessary adjustments and re-run the data load process. Following this we would again demonstrate to the customer the latest results.

Ordnance Survey MasterMap Updates

As part of the standard service, Symology will apply regular updates of Ordnance Survey MasterMap layers to the Live mapping system.

If for any reason any additional MasterMap updates are required then this option will need to be ordered.

Test System Refreshes

In order to update the data in the test system, a test system refresh can be performed, copying data from the live system.

Should there be a requirement for a test system refresh, then this option will need to be ordered.

Gazetteer Loads (per Year per Authority Area)

If the Gazetteer Maintenance functions provided with this solution are used then there will be no requirement to load gazetteers into the Symology system on a monthly basis. However, if the Street Gazetteer is maintained by another third-party system then this option must be ordered by the customer. Symology will download the latest published Street Gazetteer and ASD data from GeoPlace on a monthly basis. Following this, Symology will:

- Load the datasets into Symology
- Generate new spatial layers based on the updated data.

Training Courses

Where applicable, Symology's e-learning suite is available online where customers can log in and participate in training courses, at their own pace. Additionally, where applicable, hands-on training can be delivered.

Hands-on training courses can be delivered at Symology's Training Centres in Sheffield and/or Dunstable (Bedfordshire). Alternatively, on-site training or remote training can be provided. Where appropriate, Symology are also able to deliver bespoke, tailored training. For complex or bespoke training needs, price is available on request.

Symology can advise as to the most appropriate training option based on the number of users and previous user experience.

On-site Consultancy Services (per Day)

This item should be ordered to cover for any requirement for on-site consultancy services. On-site consultancy services are inclusive of travel and normal expenses (locations in England, Wales and Scotland, excluding Highlands and Islands).

Office based Consultancy Services (per Day)

This item should be ordered to cover for any requirement for consultancy services from Symology where the work will be carried out at Symology's Offices rather than on-site.

System Analysis & Design Services (per Day)

This item should be ordered to cover for any requirement for on or off-site System Analysis & Design Services. Such services would normally only be required if bespoke interfaces are required.

Development/Programming (per Day)

This item should be ordered to cover for any requirement where our development team will be required to write new code or scripts. It is envisaged that this service would normally only be required if bespoke interfaces are required.

UKPMS/PAS 2161/Asset Valuation Bureau Service

This is a fixed price option to provide a UKPMS/PAS 2161/Asset Valuation Bureau Service which is available in four packages; bronze, silver, gold and platinum. The table

below details the data inputs that the customer would supply to Symology, which would be dependent on the required outputs and thus the package selected.

Inputs
A single error-free validated CVI HMDIF.
A single error-free validated SCANNER HMDIF.
A single error-free validated DVI/FNS HMDIF for Footways.
A single error-free validated Item Inventory HMDIF for Footways. This MUST include Footway Hierarchies against each Footway Inventory Item.
A single error-free validated PAS 2161 Comma Separated Value (CSV) file
A Network GIS layer, either in SHP or TAB format. This should include at least the following fields; Section Reference, Length, Urban/Rural flag, Road hierarchy, Road type, DfT Classification (Road Class), Start/End Nodes, Description
Average Carriageway Widths for each Environment (Urban or Rural) and Road Class combination. (If not supplied, national widths will be used)
Deterioration Parameters (T_{INI} and T_{TUL}) for each Environment (Urban or Rural) and Road Class combination. (If not supplied, national standards will be used).
Renewal unit rates and useful treatment life values for financial reporting requirements. • Carriageway – surface renewal rates for each DfT Classification • Footway – treatment rates per square metre for each Footway Hierarchy / Pavement Type (a more detailed list breakdown will be supplied following initial processing)

All data supplied must be referenced to the supplied Network. If any data cleansing is required, then this may result in further chargeable work.

Based on these inputs, Symology will be able to use the UKPMS Tranche 3 accredited or PAS 2161 "Symology" system to provide the required outputs based on the following options. The full list of deliverable outputs will be dependent on the package selected and if **all** required inputs are provided.

Outputs
NI168 / 130-01 Reports as per PCIS Technical Notes 44
NI169 / 130-02 Reports as per PCIS Technical Notes 45
130-03 SCRIM Report
BV224b Reports as per PCIS Technical Note 38
BV187 Reports as per PCIS Technical Note 29
CIPFA Carriageway Accumulated Depreciation & Annual Depreciation Reports as per PCIS Technical Note 46, Part 1
CIPFA Footway Network Performance & Accumulated Depreciation Reports as per PCIS Technical Note 46, Part 2
SCANNER GIS layer/RAG map
SCANNER Automatic Pass/CI Treatment Report
SCANNER Coverage Report
SCANNER Observations GIS Layer
SCRIM Failed Sites GIS Layer

CVI Merge Method 3 GIS layer
CVI Observations GIS layer
CVI Automatic Pass/CI Treatment Report (Merge Method 3)
CVI Coverage Report
DVI Merge Method 3 GIS layer
DVI Observations GIS layer
DVI Automatic Pass/CI Treatment Report (Merge Method 3)
DVI Coverage Report
Asset Valuation CCI/Age Report
Budget Projection scenario for carriageway (Max 3 years)
Update of existing UKPMS network sections (up to 40 new sections)
PAS 2161 Comma Separated Value (CSV) to Shapefile (SHP) conversion
PAS 2161 Condition Hotspot Scheme Analysis Report
PAS 2161 Scheme Hotspot Mapping Layer

Symology Service Packages

The Symology Service Package is either a yearly or a one off package which provides the Customer with Training and Consultancy Services up to a pre-defined value. There are ten levels of service packages, as defined below.

Package Name	Annual Charge	Consultancy/Training Service Credits to the Value of
SP5 (Annual)	£5,000.00	£5,500.00
SP10 (Annual)	£10,000.00	£11,000.00
SP15 (Annual)	£15,000.00	£16,500.00
SP20 (Annual)	£20,000.00	£23,000.00
SP25 (Annual)	£25,000.00	£28,750.00
SP30 (Annual)	£30,000.00	£35,100.00
SP35 (Annual)	£35,000.00	£41,300.00
SP40 (Annual)	£40,000.00	£47,200.00
SP50 (Annual)	£50,000.00	£60,000.00
SP60 (Annual)	£60,000.00	£72,000.00

The package provides a credit for any combination of Consultancy/Training services at the standard consultancy and training rates. Any remaining credit on the service package at the end of each year will not be carried over. Any remaining credit on the service package at the end of the contract will not be reimbursed. It is the customer's responsibility to ensure that they will be able to utilise all of their service credits in time.

Symology Conference

The Symology Conference is for all existing Symology customers and is a free event held over two days; one in the South, one in the North. Customers represent both Authority and Utility users who are welcomed to network within the Symology community in addition to sharing best practice processes and keeping up to date with all the latest industry and Symology product news.

Compliance

Symology's Enterprise solution is fully compliant with:

- Well-Managed Highway Infrastructure – A Code of Practice
- The Technical Specification and Code of Practice for the Electronic Transfer of Notices (EToN) v6.0
- The Street and Road Works (Amendments Relating to Electronic Communications) (England) Regulations 2020
- Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters (6th Edition January 2026)
- Code of Practice for Inspections (3rd Edition July 2023)
- Institution of Lighting Professionals Guidance Note 22, Asset-Management Toolkit: Minor Structures (ATOMS)
- Elexon BSCP520 and Operational Information Document
- UKPMS Tranche 3 Accredited solution
- CIPFA/HAMFIG/CSS Asset Valuation
- BS7666 National Street Gazetteer (DTF 8.1)

Symology's Enterprise solution is a Public Cloud SaaS implementation (according to the NIST definitions) of the Symology software suite. Hosted within the United Kingdom, the service allows subscribed users to initialise access to the software suite over the public Internet.

APIs are available to integrate external systems with the service – these APIs are documented as part of the comprehensive online help system/knowledgebase and are supported through the regular service management process.

The service is available both to Local Highway Authorities and private sector companies providing services to Local Highway Authorities.

Accessibility

Symology solutions are specialised mapping-based applications rather than traditional HTML web pages and are designed with accessibility in mind. Whilst Symology solutions are not accessed by members of the public, consideration is given to WCAG standards when designing the solutions. Furthermore, the WAVE tool is used during the development phase. Solution accessibility features include the ability to operate with screen reading software, such as JAWS, alternative text and operation with minimal use of a mouse aiding people with visual and motor impairments. These facilities are in line with the requirements of the Disability Discrimination Act, and the W3C's Accessibility Initiatives. Additionally, many modern browsers provide a number of accessibility features as standard and Windows 11 provides "Ease of access" tools, which can be used in conjunction with our solution.

Open Standards

Symology's Enterprise solution complies with a wide range of open standards. These include technical standards such as the ability to export data/reports in PDF and CSV formats as a standard feature. In addition, a wide range of web services and REST APIs are available with the products, which comply with open W3C standards. The ESRI based GIS system embedded within our software is also OGC (Open Geospatial Consortium) compliant.

In addition the software meets and complies with the following industry related "open standards" – these include:

- BS7666 National Street Gazetteer (DTF 8.1)
- The Technical Specification for the Street Works Electronic Transfer of Notifications (EToN) - Versions 4, 5 and 6
- The Street and Road Works (Amendments Relating to Electronic Communications) (England) Regulations 2020
- Highway Maintenance Data Interchange Format (HMDIF) – XML based UKPMS Data Transfer standard
- Street events Data Exchange Protocol (SDEP)
- Street Lighting Unmetered Supply Extract - BSCP520
- Well-Managed Highway Infrastructure – A Code of Practice
- CIPFA/HAMFIG/CSS Asset Valuation

Information Principles

The service provides many features that are in alignment with His Majesty's Government Information Principles.

Symology solutions are hosted within the United Kingdom via Microsoft Azure. Symology and its hosting provider are ISO 270001 accredited. As such a range of information management best-practices are applied throughout the lifecycle to ensure appropriate availability and integrity, to avoid exposure and loss, and to ensure continuity across technology upgrades. Of course particular importance is placed on ensuring that personal or sensitive data is adequately protected. In order to apply these best practices an organisation culture has been established to ensure that all staff are adequately trained and are skilled in managing the effective and efficient use of information in a way that enables a customer to achieve its goals.

Symology Solutions have been used for many years by a high number of Local Authorities to hold and use data that is used, in a court of law, to defend third-party liability claims from members of public. The data that is used for these purposes is stored in a consistent and standardised manner, with full auditing facilities to ensure that the data is not tampered with after the event.

A range of interfaces (XML/REST) are available with the product. These interfaces are designed to ensure that access is only ever provided to the relevant data. Some of these interfaces are particularly aimed at providing information to members of the public – such that a self-service approach can be provided.

Information throughout the system is stored in a consistent standardised manner, and as mentioned in Section 9 (Open Standards) a wide away of open standards are supported and utilised.

The design of the Symology system follows the Write Once Read Many (WORM) philosophy and there are many areas of the system where data is re-used for difference purposes – for example physical asset data is stored centrally but re-used for inspections, works ordering, visualisation, condition projection and reporting. The Symology Asset Register has its own API such that other systems or public facing systems can access and (if appropriate) update the data held within the system. This is just one of many examples that exist within the Symology product range to help avoid multiple sources of the same information being held within a customer organisation.

Greening Government

As an ISO 14001 accredited organisation, Symology is committed to minimising the impact of its daily operations, products and services on the environment. Symology applaud the Greening Government ICT Vision, and is already well on the way to meeting the objectives of this vision.

The Management of the Company recognises that its activities have environmental impacts and has developed a range of policies to manage environmental issues properly.

These policies have the full support of the Symology Management Team, who in implementing this commitment to manage our environmental impact properly will:

- Fully comply with environmental regulations.
- Ensure that environmental considerations are integrated into our business decisions.
- Actively pursue opportunities to minimise the environmental impact of our operations, concentrating particularly on the use of energy, carbon emissions, recycling and waste disposal.
- Actively pursue opportunities to minimise our customers' environmental impact in their use of our products and services.
- Attempt to develop a wider understanding of environmental issues among our suppliers and employees.
- Regularly review our policies to ensure that they remain properly aligned to the need to reduce waste and encourage the most effective utilisation of scarce resources.
- Try to make continual improvements.

Symology's products provide a wealth of facilities which enable our customers to operate more efficiently and more environmentally friendly. Examples include:

- a comprehensive suite of mobile working solutions, with facilities to prevent repeat visits to the same sites
- facilities to calculate and model energy usage of electricity using infrastructure assets such as street lights– enabling carbon emissions to be reduced
- facilities to analyse inspector or work gang routes to ensure that work is being carried out in the most efficient manner
- work allocation facilities based on geographic areas / skill sets
- all reports/documentation that can be generated from within the system can be generated in electronic format i.e. PDF etc. and standard system facilities are provided to e-mail these documents rather than print them.

In addition, our Managed Service technical infrastructure is completely virtualised - ensuring that computing resources are maximised across all customers – whilst minimising wastage and reducing emissions at the same time.

SECTION 11 – GREENING GOVERNMENT

Symology is committed to a process of ongoing review to ensure that its policies, products and services are as environmentally friendly as is possible.

Symology's strategy also includes working towards Net Zero by 2050 and we have instructed an external Consultant to work with us on this objective. We have reviewed our carbon footprint and have been actively introducing initiatives as we work towards our target.

Information Assurance

The service holds public data relating to Highway Authority operations – that is to say, data that is or could be subject to a Freedom of Information request or which is required to be published under the New Roads and Street Works Act 1991. As such, the broad range of data would be subject to IL0.

There are three potential exceptions:

- Names and telephone numbers of individuals within Works Promoter organisations may be included in Street Works notices. This contact information would be subject to a Data Protection exemption from publication under the Freedom of Information Act (FOIA), and customers may consider these as data subject to IL1.

- Contractors charge rates held against Schedule of Rates items. This information would be subject to a Data Protection exemption from publication under the Freedom of Information Act (FOIA), and customers may consider this as data subject to IL1.

- Names and telephone numbers of members of the public who have made requests to the Local Authority, which have been recorded in Symology's Customer Service module. This contact information would be subject to a Data Protection exemption from publication under the Freedom of Information Act (FOIA), and customers may consider these as data subject to IL1.

If these exceptions are considered as data subject to IL1, customers will need to complete their own internal assurance procedures as they would for any non G-Cloud procurement.

It should be noted that Symology and its hosting supplier are both ISO 27001 accredited.

Symology is also Cyber Essentials Plus accredited.

Fault Tolerance, Backups and Disaster Recovery

Symology solutions are hosted within the United Kingdom via Microsoft Azure which has defined processes for fault tolerance, backups and disaster recovery.

For Microsoft Azure, the two Azure regions used are UK South and UK West, where UK West operates as a disaster recovery environment for solutions hosted on UK South.

Microsoft Azure provides two backup mechanisms:

- An incremental geo-replicated backup every 1 hour (to a different region)
- A log-based backup every 10-15 minutes (within the same region)

Backups are retained for 35 days, allowing a "Point in Time Restore" (PITR) to any point in time within the last 35 days.

Symology's dual hosting site passive/active model offers a high level of **business continuity** when dealing with **disaster recovery**. It is Symology's responsibility to test, validate and ensure the service is up and running and capable of meeting the defined SLA.

Symology reserve the right to limit the service to core functionality required for the business. Criticality of functionality would be established during the initial Service Mobilisation.

Depending on the reason for the failure of the service, access to the service may be via a different IP address. This would still be via the standard IP address range provided within the standard technical connection documentation. However any hard-coded uses of IP addresses by the Customer may need to be changed at short notice.

On-boarding / Off-boarding Processes

On-boarding Process

Upon contract signature and receipt of a Purchase Order, the on-boarding process begins, operating via a PRINCE2-based project management methodology.

Whilst every implementation project is different, Symology utilises a standard approach for each project that is delivered. An implementation would follow the same process, from initiation through to go-live.

For every implementation, a project initiation meeting is held at the start with the project team to discuss key project requirements with stakeholders and data owners. This also includes determining project controls and identifying project success criteria, through which the project is managed. Following this meeting, a project plan is produced, detailing key tasks, resources, milestones and dependencies.

Throughout the project, regular project management meetings will take place, where progress will be reported in addition to reviewing risks recorded via a standard versioned RAID (risks, assumptions, issues and dependencies) log.

Where a project is delivered via a phased approach, each phase has its own phase initiation meeting, which would include relevant departments to determine the precise requirements and expectations, including but not limited to data migration and interface requirements.

For data migration, our general approach is to carry out a detailed analysis of the data required for migration and agree the recommended approach for each dataset. Data migration to the new solution can include, but is not limited to, geographic areas or patches, defect codes, expenditure codes, schedules of rates, inspection types and frequencies, asset types and attributes, customer service request types and historic street works. A solution is commissioned and the agreed datasets are migrated following which a proof of concept is presented to all key stakeholders.

User Acceptance Testing is completed by solution area specialists who are involved in the configuration and proof of concept development. Upon sign off of User Acceptance Testing, training for the appropriate solution areas is completed by end users in preparation for the solution Go-Live.

Off-boarding Process

At the termination of the contract Symology will make all data available in CSV format for input into any new system. Symology's own schema will be utilised. This data will be available via sFTP for a period of 3 months from the termination of contract.

Pricing

Pricing can be found in the associated “G15 Symology Enterprise Cloud Edition Pricing” document.

Free Trial

It should be noted that free trial has been selected to facilitate access to a technical connection test rig rather than enabling functional system use.

SERVICE DESCRIPTION

Definitions

Account Manager shall mean the Symology Consultant assigned to manage the strategic and commercial relationship with the Client

Application Administrator shall mean the principal contact (and/or deputies) who is nominated by the Client to liaise with the Hosting Support Team on all issues related to the on-going use of the Service.

Application Software shall mean software developed by Symology or approved third party software suppliers, which is licensed for use by the Client in accordance with the Service.

Core Service Hours shall mean the times defined in the Service Card, during which the pre-specified level of Service Availability will be provided.

Hosting Centre shall mean the secure external data centre where the servers are located.

Hosting Support Team shall mean the Symology staff responsible for the optimised management of the Service.

Incident shall mean a problem of usability, hardware or software failure, registered with Symology's Hosting Support Team.

Maintenance Window shall mean the period defined in the Service Card, during which the service is routinely unavailable to allow for system maintenance activities.

Planned Outage An outage, requested by the Hosting Support Team, notified to the Application Administrator in advance of the event.

Service shall mean the provision of the Symology service to be provided to the Client.

Service Availability shall mean that the Service is working as described and can be accessed remotely.

Service Card shall mean the definition of various service parameters.

Service Levels shall mean the level of service availability which the Supplier will provide to the client.

Service Period shall mean the period over which service availability is calculated.

Service Plan shall mean the particular implementation of the service for the client as defined.

Unplanned Outage A complete loss of the Service, of which the Application Administrator has not been notified.

Service Management

Service Scope

During implementation of the Service, Symology will produce a Service Plan in agreement with the Client. The Service Plan will define in more detail the frequency and nature of the implementation, such as scheduled processes, system interfaces and bespoke developments/reports. It will also include details of the Application Administrator and nominated deputies.

Following implementation Symology will maintain the Service Plan, which will be available on request. If Symology make any material changes to the Service Plan which may affect the Client's use of the Service, then a revised copy of the Service Plan will be sent to the Client in a timely manner.

Roles & Responsibilities

Symology Ltd takes overall responsibility for ensuring that the Service is provided to the agreed level. Symology will ensure that only the necessary level of access is provided to its personnel who are required to maintain and support the Service.

The Client will, and will procure that its employees will, agree to abide by the terms of use of the Service as defined in the Agreement. Misuse or abuse of the Service may result in the Service being made unavailable to the Client or individual users indefinitely.

The Client must ensure that only those users authorised to access the Service attempt to use it.

The Client must also ensure that the service is being used appropriately and in the manner for which it is licensed.

The Client must nominate a contact person to assume the duties of "Application Administrator". Appropriate arrangements for deputies must also be made.

The Client must notify Symology of any changes to the nominated Application Administrator(s) and deputies, and any changes to their contact details.

The Application Administrator(s) will be required to attend all Symology training courses that are necessary for the on-going successful implementation of the Application Administration role, as defined by Symology.

The Client agrees to comply with all of the Hosting Support Team's reasonable instructions concerning the usage, modification, control and testing of the Service and to take all reasonable steps to ensure that the Client's employees are adequately trained in the correct use of the Service.

The Client must notify Symology if there are any changes to their business practices which are likely to have a material effect on their use of the service.

The Client must provide the necessary technical infrastructure to allow their users to access the Service.

The Client must notify Symology if they intend to perform any actions which could reasonably be expected to have a wide-ranging detrimental effect to the performance of the Service.

Security

Access to the servers is not available to Symology owing to its hosting provider. For solutions hosted by Microsoft Azure, Symology staff do not have physical access to the Servers.

Access is restricted to authorised workstations and users on the Symology network, connected securely to Microsoft Azure. Only a limited number of network protocols will be allowed to communicate between the workstations and remote servers e.g. RDP, HTTPS. Access is via username and password. The issue and update of all passwords is subject to a strict procedure.

All logons to the servers are audited.

Access to the Service is mediated by a Firewall. Servers are hidden behind a firewall in a "private ip address space". Servers and routers are segregated in Virtual Networks (VNet). Network security features include multi-level privileges and OS lockdowns and device change logs.

Users will initially login to the Service via a link in an automated email requiring the user to define their password, which the user will be obliged to change. The password creation is coupled with Multi-Factor Authentication (MFA). It is the user's responsibility to ensure that their password is secure and should they suspect their password has been compromised; it is their responsibility to effect a password change.

If it is believed that a user is not conforming with reasonable password confidentiality Symology reserve the right to suspend the user account or services accessible by that user.

Access to the Service is monitored. Details of this cannot be made available for security reasons.

All servers allocated to delivery of the Service have **Anti-Virus** software installed as standard, which operate continuously and are regularly monitored.

Virus definitions will be reviewed daily for updates.

All unnecessary on-line services and software are removed from the solution servers. Specific details of these cannot be made available for security reasons.

Service Monitoring

Server Performance is automatically monitored for CPU, memory, disk and network usage, and alerts sent to the Hosting Support Team if limits are exceeded. The usage of CPU, memory, disk and network usage are reviewed regularly to identify unexpected trends.

The Service is monitored using a combination of industry standard tools and bespoke monitoring software under the control of the Hosting Support Team. These are not connected to the Hosting Centre's network other than by the Internet.

An alerting process operates 24 x 7 x 365 notifying key personnel within the Hosting Support Team of any operational server status changes.

If the 'Client Side' Service is unavailable to the Client, it is the responsibility of the Application Administrator to notify Symology of the Unplanned Outage by means of a telephone call to the Hosting Support Team. At the time of logging the call, if requested, the Application Administrator will be provided with a unique Customer Service Request Number; this will identify the support request and will be used to reference the specific incidence of unavailability. The period of service unavailability will be taken to start at the time the support call is recorded on Symology's Customer Service system.

If the cause of the service unavailability is with the Symology managed software, hardware or communications, the Hosting Support Team will organise the rectification of the problem and ensure the Client's Application Administrator is kept informed of the call progress. Once the Service is available the support request will be closed. The period of service unavailability will stop being measured at the time the support request is closed. The call will be closed with a status indicating that the service unavailability incurred was the responsibility of Symology.

If the cause of the service unavailability is outside of Symology's control, Symology will notify the Client that the Service is operating correctly. The support call will then be closed and no service unavailability will be logged. The call will be closed with a status indicating that the service unavailability was not the responsibility of Symology.

Service/System Administration

In the normal course of events, **Planned Maintenance** tasks will be performed outside the defined core working hours, normally during the Maintenance Window. Planned Maintenance includes, but is not limited to, the following tasks:

- routine deletion of temporary files, disk defragmentation, etc
- backup of data

- activities to accommodate new data or applications
- archiving
- updates to anti-virus services
- application of security patches
- updates to firewall and security procedures
- any other work determined by the Hosting Support Team to be essential in the continued provision of the service.

In some circumstances, such as upgrades to provide additional security, the upgrade must be applied immediately for security reasons.

It is Symology's policy that upgrades should be applied to the Service, at Symology's discretion, where they will result in a benefit to the effectiveness and quality of service provided. This will include, but is not limited to:

- the hardware and physical infrastructure of the system
- the operating system and system software
- security patches and fixes

The Hosting Support Team will endeavour to undertake such upgrades outside Core Service Hours. Where this is not possible the Hosting Support Team will endeavour to provide the Client suitable notice but in such circumstances no notice period can be defined.

It is Symology's policy that Symology **Software Patches and Service Releases** necessary to maintain service availability or address critical fixes should be applied to the Service at Symology's discretion.

Other Software Patches and Service Releases will be applied in agreement with the Application Administrator (such agreement will not be unreasonably withheld).

Prior to the implementation of a new version or the introduction of significant functional change users will be notified of the planned upgrade dates for the Test and Live systems. The Test System update allows users an opportunity to review the functionality prior to utilising it in Live. The Live System implementation plan proceeds as scheduled unless the Client is notified otherwise.

For **Data Migration/Conversion**, where a service is being moved from a local environment into a Managed Environment, or is being converted from another supplier, a Test environment will be provided. It is the responsibility of the customer to work with their Account Manager to ensure that the Test System is configured in the exact manner that they require their live system.

Unless Symology are notified to the contrary it will be assumed that the Test System implementation has been correctly configured. Again, unless notified to the contrary, it will be assumed that the Test System configuration is acceptable for Live implementation.

Service Constraints

Data Migration of historical records is not provided within the standard costs. Prices can however be supplied following further analysis of the requirement.

Access to following areas of the System will only be available to the Hosting Support Team:

- System Options including the Licensing and File Location Configuration Parameters
- Database Codes, Service Codes and Street Gazetteer Codes
- Database Structure and Physical Disk Organisation Parameters
- Inbound and Outbound Interface Transfer directories
- Mapping Definition and Layer Symbology
- Archiving Facilities.

Service Levels

The Service will be available for at least the target service level of Core Service Hours in each period as specified in the Service Card.

Although not within the scope of the Service Agreement, the Service will in the normal course of events remain available outside of Core Service Hours, except during the Maintenance Window defined.

The calculation of Service Availability will not include the following:

- Any System Administration activities which by agreement with the customer are undertaken within Core Service Hours
- Client caused outages - these may be actions due to the Client's action on the Service that is not part of the normal use of the Service or over-utilisation of the Service
- Any unavailability relating to or caused by a material breach by the Client of the terms of the Agreement
- Any unavailability as a result of the Client's inability to connect which is outside of Symology's control
- Any events beyond the reasonable control of Symology, such as force majeure events

The Hosting Support Team will notify the Client of any Planned Outages to the service, outside of the Maintenance Window. For planned maintenance an advance notification will be given within the period defined in the Service Card. For planned maintenance activities the work will be scheduled outside of the defined core hours.

In the event of an Unplanned Outage occurring that requires remedial action the Hosting Support Team will endeavour to provide the Client with suitable notice but in such circumstances no notice period can be defined.

This Service Card details the default parameters which apply to the service.

SERVICE CARD

Service Parameters:

Core Service Hours:	08:00 to 18:00
Service Week:	Monday to Friday
Public/Bank Holidays:	Excluded
Service Period:	3 months
User Inactivity Suspension	30 Days
Outage Notification Period:	2 Weeks
Maintenance Window:	4 hours every other Thursday after 18:00
Application Timeout:	20 minutes
Password Timeout:	30 days
Background Map Data Updates:	Quarterly
Archiving Processes:	Upon Customer Request
Retention of Backup data:	3 months
Allocated Total Storage Capacity:	250 GB
Service Environments:	Live, Test

Service Availability

Target Service Level: 99% of Core Service Hours

If the Service Availability falls below the Target Service Level in any service period, the Client shall be entitled to be granted a Service Credit against the Fees for that service period, at the appropriate level as indicated in the table below and in accordance with Section 5 of the Service Description.

Service Level	Failure Credit
98%	5%
97%	10%
96%	15%
<= 95%	20%

Service Credits

Service Credits will be granted in accordance with the terms of the Managed Service Agreement.

The Service Credit will be calculated in accordance with the relevant Service Card band and based on the pro-rata Charge for the Service Period.

Service Credits are not additive, that is, only one credit can be applied in any given service period.

Target service availability within Core Service Hours is defined within the Service Card. This will be monitored on the agreed Service Period defined within the Service Card. The following formula shall be used to calculate the percentage availability each period:

(Time logged as available/Core Service Time) * 100%

For the avoidance of confusion, the "time logged as available" will be calculated as the total length of Core Service Time minus the total time Symology were responsible for Service unavailability within the period.

The total service unavailability will be calculated as the total difference between each ‘Service Unavailable’ request being logged and being closed in Symology Customer Service system, where the service unavailability was the responsibility of Symology.

Service Support

The Client shall not use the facilities offered by the Service to make requests for information and/or assistance, which would reasonably be considered as training.

Support is provided for the maintenance and availability of the Service hosted by Symology. This will include regular maintenance of the related infrastructure including backups and operating system patching.

If a fault is diagnosed with an item of software or hardware that is covered by a third party maintenance agreement it will be escalated in accordance with that agreement in a timely manner.

Support does not extend to primary support where the Service is unavailable to a particular Client or user because of their local network problems. In such circumstances, the criteria for determining that the problem is local to the Client will be that the Service is available to at least one remote site over an Internet connection.

The Application Administrator will be responsible for logging support calls and incidents, assisting in preparing for new software releases, organising training courses, and representing the Client at Symology Conference. They are also responsible for requesting new users, changes to existing users and requesting changes to functions or configuration. *Further details regarding the Application Administrator's responsibilities are detailed in the Service Management section.*

Application Management and Administration

Licensing	The Hosting Support Team will assume full control for all the licensing issues related to the operation of the Application. The Application Administrator will have the authority to specify the association of the licensed functions with a User Account. The actual implementation of the association will be performed by the Hosting Support Team.

Application Monitoring	It is the Client's responsibility that any problems with the service or the application are reported to the Hosting Support Team when they occur in a timely manner. The Hosting Support Team will manage any necessary investigations. Failure to report problems in a timely manner, with an appropriate amount of detail may result in more serious problems occurring which require actions to be performed outside the scope of the service provision.
Monitoring "System" Logs	The Hosting Support Team will check system logs on a regular basis where available. The Hosting Support Team will manage any necessary investigations.
Monitoring Scheduled Processes	The Hosting Support Team will monitor all scheduled/batch processes to ensure that they are running successfully in accordance with the agreed schedule. The Hosting Support Team will manage any necessary investigations.
Monitoring "Functional" Logs	It is the Application Administrator's responsibility to monitor that the results of scheduled processes match the expected business requirements. Where the process does not meet the business requirements it will be the Application Administrator's responsibility to investigate the cause of failure. If they are unable to rectify the issue the Application Administrator must contact the Hosting Support Team.
Monitoring External Interfaces	It is the Application Administrator's responsibility to ensure that the results of any interfaces with external systems, match the expected business requirements in the external systems. Where the process does not meet the business requirements it will be the Application Administrator's responsibility to investigate the cause of failure. If they are unable to rectify the issue the Application Administrator must contact the Hosting Support Team.

Resolving Web Service/Interface Connection Issues	It is the Application Administrator's responsibility to monitor any non-transient connection issues with Web Service/Interface recipients. Failures should be reported to the Hosting Support Team. It is the Application Administrator's responsibility for ensuring any transactions which need to be resubmitted are done so. At the request of the Application Administrator, the Hosting Support Team will, where practical, take actions to resubmit en masse all transactions which are identifiable as unsent. In the event of continuous external failures, Symology reserve the right to refuse to resubmit, or to charge for any resubmission activities.
Resolving OD Batch File Changes (EToN only)	All changes to OD Batch details should be submitted via Web Services and therefore require no intervention from the Application Administrator or Hosting Support Team. It is the Application Administrator's responsibility to notify the Hosted Support Team of any OD Batch files which need to be loaded manually for any reason. At the request of the Application Administrator, the Hosting Support Team will load the supplied batch file into the Service. In the event of continuous changes, Symology reserve the right to charge for any resubmission activities.
Definition of Permission Profiles	Permission Profiles are records that define a set of Authority permissions. Each user must be associated with a Permission Profile. It is the responsibility of the Application Administrator in conjunction with the Hosting Support Team or Account Manager to determine the correct Permission Profile definitions.

Application Administration Permission Profile	An Application Administrator Permission Profile for accessing the solution will be provided as part of the set-up process. This Permission Profile will have access to all the facilities provided, along with the authority to change certain configuration and system option settings. Key user accounts can then be associated with the Application Administrator Permission Profile allowing them to inherit these permissions. It is the Application Administrator's responsibility to ensure that the configuration options are set correctly for their business requirements. Only an Application Administrator has the ability to request "System" changes to the configuration.
Definition of Users	An Application Administrator will have the capability of requesting new Users. It is the responsibility of the Hosting Support Team to set up the users and the appropriate access permissions. Where agreed, the Application Administrator can administer the creation of new Users. New users can only be requested by email from the Application Administrator, or in their absence by email from a deputy registered previously with Symology, via email. The email must be sent from the Client's email system and not a private system. Symology reserve the right to refuse a request to create an account if it is believed that the integrity of the system could be compromised.
Password Definition	The definition of a user's password is administered solely by the user, who will create their own password upon receipt of their login credentials. The password creation is coupled with Multi-Factor Authentication (MFA). Password safety and security remain the responsibility of each user.

Password Resets	Password resets are performed by a user selecting the "Forgot your password?" option on the login screen to reset their password. Symology reserve the right to refuse a request to reset an account if it is believed that the integrity of the system could be compromised.
Batch Process Requirements	The business requirements for any batch processes will be agreed between the Application Administrator and the Account Manager. Once finalised they will be passed to the Hosting Support Team for implementation. If the requirements for batch/schedule processes are such that they would place unreasonable or excessive load on the managed service, then Symology reserve the right to make an additional charge for provision of this service. This charge will not be levied if the requirements would be considered reasonable for standard operation of the service.
Definition and Scheduling Batch Processes	The Hosting Support Team will ensure that the batch/schedule processes are defined and scheduled as per the business requirement. In general, batch/schedule processes will be scheduled outside of core hours, unless by their nature it is considered reasonable and practical to schedule them within core hours. The right to charge is reserved in the event of continuous changes to requirements.

Archiving	The number of archive runs included within the Service is defined on the Service Card. Archiving policy will need to be agreed between the Application Administrator and the Account Manager. The agreement will be documented on the Service Plan. Once agreement has been reached, the Hosting Support Team will archive data in accordance with the policy. Each archive run will require exclusive use of the application, and this will not be included within service availability calculations.
Test Systems	The Hosting Support Team will provide a test system. If updates are required, then Symology reserve the right to charge for these updates. In addition, the Hosting Support Team must be informed 30 days in advance of the required date. In general, the Test System will not have exactly the same integration capabilities of the Live System. For example, it will not have the ability to send and receive Street Works transactions. This is to safeguard the end users from entering data that could then be erroneously sent to a live 3rd party system.

Advanced Reports	The Enhanced Reports licence is necessary for users who require access to advanced Report facilities. If this facility has been licensed then the Enhanced Reports Licence will be made available in the appropriate system. Unless users are sufficiently proficient, it is recommended that templates be refined and tested in the test system prior to being implemented in the Live system. Please note, any corrective actions as a result of user error, performed by the Hosting Support Team may be chargeable. The Application Administrator will be responsible for determining the users who have access to the Enhanced Reports function. If users have not licensed the Enhanced Report Licence, they will still have access to the standard Report facilities.
Report Viewer	This is a standard facility provided to all customers, in both the Live and Test systems, to view pre-determined templates. Where customers have not licensed the Advanced Reports facility, these will be the standard Software Templates.
Standard Reporting	It is possible to provide Reports of a statistical nature, reporting on tables within the underlying business database. Any standard reports of a mandatory nature relating to National Indicators etc. will be provided in accordance with the prescribed timetables.

Bespoke Reporting	Any requirements for bespoke reports based on database tables are outside the scope of the basic Service and requirements will need to be discussed with the Account Manager. In general, due to the complexity of the database, the need for on-going maintenance as a result of database changes and the potentially detrimental effects on the Service of a poorly designed query, the two realistic options for the Client are to engage Symology's services to design, maintain and manage the reports or to utilise the data warehouse function. If the Client pursues the option of designing their own reports and queries, then Symology reserve the right to make a charge for any additional load placed on the Service, and/or to remove the reports if it is considered that they will have a wide-ranging detrimental effect to the performance of the Service.
Embedded Mapping	The Hosting Support Team will control the installation of the embedded mapping software. As part of the initial configuration process the Hosting Support Team will define and create the map document(s) and map layer structures including the appropriate Symbology and access permissions.
Creation of Standard Map Layers	The Hosting Support Team will control the creation and installation of the Map Layers typically required for System implementation.
Import/Export of Map Layers	Where the requirement exists to import/export (on a regular basis) Map Layer information from/to the solution to/from a 3rd party this must be agreed between the Application Administrator and the Account Manager. Symology reserve the right to charge where significant work is required, or the work needs to be provided "out of hours".

File Retrieval	On completion of a process, any export, transaction or report files will generally automatically be made available via the solution. From this location they can be downloaded locally. For any file not automatically available, the Hosting Support Team should be contacted to perform the transfer.
Interface File Upload	It will be the responsibility of the Application Administrator to upload 3rd party data files required for processing within the System, where applicable.
Gazetteer Import	All Gazetteer Import Facilities are controlled by the Hosting Support Team.
Mobile Device Solution	The Hosting Support Team will implement all the technical server-side components to enable use of the Mobile solution in line with any Software Upgrades performed.
Mobile Device Software	The Hosting Support Team will ensure that the latest version of the Mobile Device software is permanently available. Customers are expected to update all their mobile devices such that they are running the version of the software provided.

Mobile Device Installation	It is the Client's responsibility to install the Mobile solution on all their mobile devices. To enable successful installation of the Mobile solution on the mobile devices, it is the responsibility of the Client to provide: • access to the internet for attached mobile devices • no firewall restrictions that would prevent or limit access to the Symology solution • no restrictions that would prevent the downloading of Symology mobile software • no restrictions that would prevent the running and installation of Symology mobile update software • update access so that the update programs work successfully It is the Application Administrator's responsibility for implementing and maintaining the Mobile Device Access Profiles within the solution, where applicable.
Mobile Device Usage Policy	Provision of the Mobile device solution is dependent on the acceptance of a fair use policy. It is expected that Customers will use the solution in an efficient, reasonable manner. Symology reserve the right to charge where use is outside of the fair use arrangements.
Warranty Responsibility	The warranty and maintenance of all devices are the responsibility of the customer.
Street Works Charging Regime Maintenance	It is Symology's responsibility to maintain/manage the Street Works Charges. It is the Application Administrator's responsibility to review the Street Works Charges.
Street Works Message Settings	It is the Application Administrator's responsibility to maintain/manage/review the Street Works Message Settings in accordance with national standards and any local requirements.

Working Days Calendar Definition	It is the Hosting Support Team's responsibility to maintain the Working Days Calendar in line with requirements where applicable.
Portal Downloads	It is the responsibility of the customer to ensure that all important documents are downloaded from the solution.

Corrective Actions

Correction of System Errors	Following identification of system errors (For example an Operating System or 3rd Party Software Error etc) the Hosting Support Team will assume full responsibility for the correction of the error. If there is a major operational problem the Hosting Support Team will attempt to get the system operational within the time constraints determined by the Service Level Agreements. If it is a problem, which does not affect key operations, the Hosting Support Team will organise in conjunction with the Application Administrator, the corrective action and the time it is to be performed. The Hosting Support Team will perform all correction operations. At all stages the Hosting Support Team will keep the Application Administrator informed.
Correction of Data Errors	After the identification of a data error (for example a Data Corruption or inconsistency) the Hosting Support Team will assume full responsibility for the correction of the error. Dependent on the type of data error the Hosting Support Team will schedule corrective action. Whenever possible, these will be undertaken outside of the Core Service Hours.

Technical Administration

Operating System	The Hosting Support Team will take full control of the operating system.
Operating System Upgrades	The Hosting Support Team will take full control for updating the operating system. The Hosting Support Team will ensure all 3rd party software is compatible with the new operating system version.
Operating System Patches	The Hosting Support Team will take full control for applying operating system patches.
Virus Checking	The Hosting Support Team will take full control for installing and monitoring the virus checking software. In the case of a serious security risk the application server may be taken off-line and appropriate measures taken. This action will only be taken in agreement with the Application Administrator.
FTP & Web Services	FTP & Web Services (where applicable) will be managed by the Hosting Support Team on a separate server, which is configured to operate with the System.
Disk Management	The Hosting Support Team takes responsibility for Hard Disk Management, where applicable.
Processor Usage	The Hosting Support Team will monitor the server performance during the course of the working day and will advise the Application Administrator of any processes that are causing system performance to deteriorate.
Hardware Maintenance	The Hosting Support Team will assume responsibility for all hardware maintenance issues, where applicable.
Interface Technical Implementation	Any configuration or installation required to facilitate an interface into the system will be performed by the Hosted Support Team.

Interface Monitoring	The Hosted Support Team will monitor the process or service to ensure that it is running at the appointed time and also provide a cursory check to ensure that reasonable results are being produced.
Functional Interface Monitoring	It is the Application Administrator's responsibility to ensure that the interface is working as expected in terms of the rules governing the processing of transactions and the exact results that are being produced. The Application Administrator is also responsible for the identification and correction of functional errors / warning messages produced by the interface process.

Disaster Recovery

Backups	Hourly, a geo-replicated backup is taken and located on a different region, retained for 35 days. By replicating the data Symology can ensure that it will have secure backups offering an RPO of 1 hour and an RTO of a maximum of 12 hours. (Enhanced SLA available offering an RPO of 5 minutes and RTO of 1 hour.)
Backup Validation	The Hosting Support Team will perform the validation of the backup procedure.
Virus Checking Software	The virus checking software will be as per our recommendation. The Hosting Support Team will ensure that the virus software is kept up to date.
Networking	Connection to the solution is the responsibility of the Client. The Hosting Support Team may be able to offer advice on resolving any connection issues.

Customer Service/Support Operations

The goal of Symology's Customer Support Service is to ensure that all customers receive the assistance they require for the successful use of Symology's software products and services.

As part of the company's on-going commitment to quality and best practice, Symology has adopted the internationally recognised ITIL approach to Service Management. ITIL provides a cohesive set of best practices, which have been drawn from the public and private sectors internationally.

This section defines all relevant information regarding the standard support service provided by Symology as from the revision date detailed in the document footer.

The performance of our Customer Service is continually reviewed in response to feedback from our customers. If there are any areas of this service, which you feel could be improved, please contact Jon Panconi our Customer Services Manager via 01582 812444 or jon.panconi@symology.co.uk with details of your suggestions.

Symology's support systems and processes are monitored on an ongoing basis against ITIL best practice guidelines.

Terminology

In line with ITIL standards, customers should be aware of the following terminology and definitions:

Previous to the introduction of ITIL standards Symology staff used the term "Requests" to refer to all issues raised with the Customer Service team. Under ITIL the term "**Case**" will be used instead.

Each "**Case**" will be either an "**Incident**" or a "**Service Request**".

An "**Incident**" is something which may cause an interruption to your service.

A "**Service Request**" is a request for information, advice or a change e.g. a request for a password to be reset on the Managed Service or an Enhancement Request.

Commitment to Customers

Customer Satisfaction

Customer satisfaction is of the uppermost importance to Symology. This should be reflected in the level of service you receive and in the way that you receive it.

In addition to feedback you give Symology via your Account Manager, the Symology Annual Conference and other direct communications, we proactively measure customer satisfaction in the following ways:

Customer Surveys

Customers will receive support survey emails on a regular basis depending on how many cases they raise. This provides the customer with the opportunity to rate how satisfied they are with the service.

Account Management Meetings

In addition to the regular email surveys relating to the Support service each customer organisation will be visited by their allocated Account Manager (at the very least once per year) to review their overall satisfaction with the products and services that they receive from Symology.

The results from each of these processes will be used to drive further improvements to our service. Any formal complaints will be recorded and acted upon, and the customer will be contacted by telephone by a senior member of staff to acknowledge and discuss the issue arising.

Customer Service

The Customer Services team will endeavour to provide the best possible service to all customers at all times. Our aim is to provide a service that ensures that expectations are met or exceeded and delivered in a manner that customers appreciate.

The Customer Services team will be proactive in updating users, chasing users for responses and retaining ownership of reported issues when immediate responsibility rests with another person or department within the company.

Customers should expect that all Symology staff are responsive, attentive and courteous at all times. Should you ever feel that this expectation is not being met please contact the Customer Services Manager.

Customer Communication

Communication with the Customer Services team is likely to be through a mixture of telephone, email and the on-line customer service reporting portal.

Email from Support Analysts will usually come via the Support system and have an address of support@symology.co.uk with specific Case Reference tags in the subject line. It is important that responses to these emails are replies to the original email and preserve the Case Reference tags in the subject line.

Where appropriate we use shared remote access sessions between Support and user desktops to investigate Cases and demonstrate solutions.

Customer Service Level Targets

Our Service Level targets are defined in Appendix A of this section.

Our Expectation of the Customer

Email

Customers' support contacts must each have their own email address, unique to them as an individual.

This allows our Service Desk system to automatically identify the individual logging the support request, and allows us to contact the individual directly by other means (including phone) if need be. It also allows our system to update the individual directly when the status of the support request changes.

These email addresses should also be specific to the supported customer organisation. For example, if a more than one customer organisation outsources their ICT operations to a contractor, and that contractor's staff may require support from Symology, those members of staff must have access to different email addresses for each customer.

This allows any support request raised by email to be automatically associated with the correct customer organisation.

If these requirements cannot be met, delays may be incurred and the Service Level targets defined in Appendix A will not be applicable.

Training

Customers requiring support are expected to have had relevant training in Symology's products.

The Customer Service Desk should not be viewed as an alternative to attending training courses or taking on-site consultancy services. In particular, it should not be expected that step-by-step assistance will be provided over the telephone for issues that are covered by training courses which the customer has not attended.

On-line Help/Manuals

It is expected that all customers are familiar with, and have access to the help/training system/knowledgebase and all relevant training course documentation provided. This may facilitate some incidents being resolved prior to an issue being raised with Support or outside of standard support times.

Super User/Primary Support Contact

It is absolutely essential that each organisation appoints a primary support contact or "super user" (or one per business area in the case of larger organisations). This person will be a more experienced user and responsible for raising issues with Support, filtering out any common local issues first.

Software Upgrades

When a new version of the software is issued, it is expected that the test system will be used to allow the customer to identify the impact of the new software on their own local processes, locally defined reports and interfaces, etc, as well as an opportunity to familiarise users with changes. It also gives the customer the ability to test new upgrades and to test recommended solutions and bug fixes safely without any impact or risk to the live system.

Self-Service and Local Problem Solving

In many circumstances customers can resolve issues quickly using our self-service facilities and/or by conducting initial diagnostic actions locally.

Self-Service

When logging a new case via the Customer Service Portal, the support system will automatically check the details recorded against its knowledgebase and, where it is a known issue, will provide details of a previously recorded resolution to the problem.

The user can also search the knowledgebase for tips and advice.

How to Raise a Case

Symology's Customer Service Team can be contacted by any of the following means:

- Telephone: 01582 812444
- E-mail – support@symology.co.uk
- Customer Service Portal - http://support.symology.co.uk

Regardless of the method used to raise the case, the user will be contacted via telephone or email by the Support Analyst assigned to the case.
Standard service hours (unless otherwise agreed) run Monday to Friday (excluding English national holidays) between 08:00 and 18:00.

Telephone

The information will be recorded in the Support system following operational procedures. Customers will be advised of the Case number and will receive an email confirming this.

Email

Emails can be sent at any time, however customers should be aware that any Case reported by email outside of agreed service hours may not be investigated until the next working day.

The information will be recorded in the Support system following operational procedures. Customers will be advised of the Case number and will receive an email confirming this.

Customer Service Portal

The Symology Customer Service Portal provides a web interface that allows customers to:

- Search and browse the Knowledgebase

- Log new Cases, specifying a Priority
- Check on the status of existing Cases (including those opened by phone or email)
- Add comments and attachments to existing Cases

A detailed Customer Service Portal User Guide is available to users on logging in to the portal.

Every contracted customer will be provided with login credentials for one individual to access the Customer Service Portal. These login credentials are specific to the individual and must not be shared with other individuals. At Symology's discretion, login credentials for further individuals may be supplied.

The Support Process

Case Creation & Classification

All cases are recorded on Symology's internal Service Desk Management system. This handles all Cases – both Incidents and Service Requests.

Regardless of the method used by the customer to communicate the request, the user will always receive email confirmation of the Case number during the Case creation process.

If a customer has given an indication of their perception of the priority of the Case (see Appendix A) this will be noted on the Case. Failing this, the Support Analyst will use their best judgement as to the most appropriate priority. If no priority can be easily determined, the priority will be initially set to 4 (Queries/Advice) – see Appendix A.

If the Support Analyst believes the Case priority has been set incorrectly by the customer they will contact the customer to discuss and agree the priority as appropriate.

Case classification includes checking all the Case details and assigning ownership of the Case to a Support Analyst.

There are circumstances under which support may not be available. For details of these, please refer to the Product Support policy in Appendix B at the end of this section. This will always be discussed with the user.

Case Assessment & Knowledge Base Searching

The assigned Support Analyst will initially assess the Case details. They will next look at other Cases open for that user to check for any correlation and, if so, to talk to the Support Analysts involved.

The Support Analyst will next search the Knowledge Base for previously recorded Cases of a similar type, and the recommended solutions.

For high priority Cases the user will be contacted before/during this process.

Case Investigation & Progression

Any relevant information gained from the Knowledge Base will direct the investigation, which will be carried out in conjunction with the user.

The Support Analyst will initially respond to and then update the user at regular intervals.

Sometimes Support staff will need direct access to the user's systems to investigate a Case efficiently. Where the software is running on a customer managed system, a remote access tool will be used, where possible, to provide a window onto the user's

system, allowing Support staff to watch the steps the user took leading up to the incident and see the incident itself replayed. Direct access to database servers and/or application servers may also be required.

Where necessary, Support staff may request additional information from users to that supplied when the Case was created.

Every effort is made to reduce the level of user time required in Case progression. However, in some complex situations the amount of user time required may be relatively high. Discussion between the Support Analyst and the user should take place to ensure that the user is involved at times that result in the least possible disruption to their business.

Where required, Support staff will contact third line support resources and third party organisations to aid with the investigation.

Case Updates

Users will be updated at regular intervals. For details of the relevant Service Levels see Appendix A.

All user responses will be entered in the Case details. When an email is sent to a user the Case number will be included in the subject line of the email.

All communication from users to Support must be accompanied by the relevant Case number unless it is a new Case being created.

Users can use the self-service features described earlier to check on progress or to update Cases on-line. In addition, of course, users can ring or email the Support Analyst investigating the Case. Where updating the Support Analyst by email users should respond by replying directly to an email from the Support Analyst. This should have an address of support@symology.co.uk and will contain specific Case Reference tags in the subject line that ensure that the details in the reply are automatically entered into the Support system.

Where Support is waiting for information from a user for high or very high priority Cases, the analyst will remind the user that a response is being waited for. However, it remains the responsibility of the user to remember to respond and to monitor the status of their Cases.

Case Resolution

For Incidents, the aim of the investigation will ultimately be to resolve the customers experienced service failure as quickly and effectively as possible. When the Incident relates to an underlying problem in the program code, a workaround will usually be quicker to produce than a program change — as a result, the primary aim will be to find a workaround that is acceptable to the customer. If an acceptable workaround can be found, the Case Status will be set as “Solution Proposed” (see Appendix C) and the

underlying problem escalated within Symology. If an acceptable workaround cannot be found, the Case Status will remain as "In Progress (S)" while the underlying problem is escalated within Symology.

For Service Requests relating to requested enhancements, these will be managed and tracked by the customer's assigned Account Manager.

Case Implementation & Testing

Once a solution has been identified, it will need to be implemented on the user's system. The implementation will usually be carried out by the user, although in some circumstances the Support Analyst will do this via remote access. The resolution will ideally need to be implemented and tested on the user's Test environment prior to deployment on the Live system. This avoids further problems, e.g. data integrity corruption, which could be caused by a faulty resolution.

The implemented resolution must then be tested by the user and the results reported back to the Support Analyst. It is important that the Support Analyst is informed even if the resolution is satisfactory, so that the case can be closed.

Further investigation will occur should the implemented resolution fail to resolve the original problem.

Case Closure

A Case will normally be closed on the user's instruction once they have confirmed that service has been restored or the service request completed. However, where a Case is awaiting a response from customer for more than 14 days the user will receive an email reminder that the Case will be closed automatically after a further 7 days if no response is received. Automatic Case closure will be confirmed by email.

It is important that users either inform Support when a supplied resolution has resolved the Case, or close the Case themselves through the Customer Service Portal.

Previously closed Cases cannot be re-opened.

Where a previously closed Case was closed in error, either by the user or by the Support Analyst, a cloned Case will be created and the user advised of the new case number.

Case Monitoring

Users can monitor the progress and status of their Cases via the Customer Service Portal or by calling the Customer Service team.

Case Escalation

Cases will be escalated on user request where agreed with the Customer Services Manager.

The case should initially be escalated to the Support Analyst managing the case. If the case still fails to be handled in a manner consistent with the standards detailed in this document then the case should be escalated to the Customer Services Manager. Finally, if the user is still not happy with the progress or management of the case, the case should be escalated to the user's Account Manager and Support informed.

Cases that are escalated will not necessarily have the priority of the Case changed.

Service Level Management

The service level targets defined in Appendix A of this document will be monitored and measured, and every effort made to meet them.

Where a user believes that response or update targets are being regularly missed, or the correct process does not appear to be being followed, the Customer Services Manager should be informed via jon.panconi@symology.co.uk.

Software Change Management

Where a case has been identified as an application fault, or documentation that requires resolution, it is passed to the Development team. Where possible an estimated date for resolution will be supplied to the user via Support.

Where a software or documentation change is appropriate then this will be included in the next full release or patch release depending on urgency and priority. Users will be informed when new releases are available.

User Complaints

Where users feel that all other means to address poor service have been exhausted and wish to complain formally then a letter or email should be addressed to the Customer Services Manager via jon.panconi@symology.co.uk. All complaints are investigated with the involvement of the user.

Appendix A – Service Levels

The Service Levels in this appendix will apply unless other contract-specific service levels have been agreed.

All service level times stated are targets and are not guaranteed. The quoted times are based on the availability of full direct access to the user's systems via an appropriate remote access tool or direct dial-in facilities.

Case Prioritisation

One of four business impact priority values will be assigned to a case, as described below.

Priority	Name	Description
1	Critical Impact	Whole system or major functional area inoperable.
2	Significant Impact	Problem significantly affecting operation. System usable but severely limited.
3	Moderate Impact	Minor problems. System largely usable.
4	Queries/Advice	Non-Urgent. Queries and Advice.

For Cases raised via the Customer Service Portal, support will use the priority specified by the user. For Cases raised by email, if no priority can easily be determined from the text of the email, the priority will be set to 4 (Queries/Advice).

Response and Resolution Targets

Priority	Response Target	Resolution Target
1	1 Hour	24 Hours.
2	1 Hour	3 Days.
3	24 Hours	Investigated within 5 days, although the software may not be upgraded until the next software release.
4	24 Hours	n/a.

All timings are based on the agreed Service Hours (see section 4). The "clock" is effectively stopped when waiting on response from the customer.

It is expected that the customer has applied all software updates that have been issued. Where the Customer Support Team identifies that a new version of software is required, either because the problem has been resolved recently, or a new software

release has been created to resolve the reported problem, the customer is expected to apply the update forthwith.

The support service is limited to products which are defined in the customer's Licence Agreement and matters directly associated with the operation of those products within the environment specified.

Symology reserve the right to raise charges for any significant time spent on other matters such as the setup, configuration or problem investigation of operating systems, networks and communications on non-Symology supplied components.

The support service is designed to operate with a customer contact who is fully trained in the use of the Symology products. It does not provide an alternative to appropriate training and consultancy services.

Where the Symology products provide user-specification facilities (e.g. template definition, report generation, dictionary definition) the support service does not include using the tailoring facilities to provide the required output for the customer. Although guidance will be provided in response to specific queries, any requirement to "build" the required system for the user will be chargeable.

Advice and guidance will always be provided for recovery from operational problems. Where the difficulties are caused other than by the Symology products (e.g. operating system or hardware failures) or as a result of the customer not following recommended procedures for security and recovery, Symology reserve the right to charge for any extensive time spent on problem resolution.

Where a service call results in a recommended action from the support staff, customers are requested to always inform the support team of the results of carrying out the recommendations.

Even in the event of a successful outcome, this is important in order to clear the case in our system.

Appendix B - Support Policies

User Status

It is our policy to withhold support from users who have been put "On Hold" by our Finance and Administration department. This most typically occurs as the result of invoices being outstanding beyond the terms of the contract.

Supported Versions

It is our policy to provide support for all versions of our solutions. However, for releases older than the penultimate available version the support provided may be limited.

Product upgrades and patches will generally only be made available for the latest version of any product except in the case of high impact cases. User specific exceptions may be made at the discretion of the Customer Service Manager or by mutual agreement with Symology.

Version Compatibility

With every major release of the software, where required, Symology issue a "Product Compatibility" document at the same time the Advance Release Notice is distributed to customers.

The Product Compatibility document describes what versions of software are supported with different operating systems and versions of third-party components. Support can only be provided where compatible products for the version in question are being used.

Unauthorised User Modifications

Where the system database or applications have been modified by the user without agreement or instruction from Symology e.g. editing the underlying database directly, it is our policy that support will be withheld.

If a case is reported to Support, and investigation of the case shows that it has occurred as a direct or indirect result of user modifications not sanctioned by Symology, then Symology will make a charge relating to the amount of time spent by Symology investigating the case. Charges will be based on standard office-based consultancy rates.

Training/Documentation/Help

It is our policy to check that the user experiencing the problem has received appropriate training. Support will not be given to users who have not received training except at the discretion of the Customer Services Manager. Support will be given if training is scheduled and already paid for.

It is not intended that Support be used as an alternative to reading supplied documentation such as Installation Guides, Release Notes, Knowledge Base or On-line

Help system. However, advice and help on understanding supplied documentation will be provided.

Appendix C - Case Status Codes

Status Code	Description	Action waiting on
New	These are cases that are "Awaiting Allocation" these will be assigned to a Support Analyst by the Support Team Co-ordinator.	Symology
Allocated	The case has been allocated to a Support Analyst but is not being actively worked on.	Symology
In Progress (S)	The case is actively being investigation by (S)ymology.	Symology
In Progress (C)	The case is awaiting a response from the (C)ustomer. Cases at this stage will be automatically closed after 21 days if no response is provided by the customer, however 7 days before this a reminder e-mail will be generated.	Customer
Solution Proposed	A solution has been proposed by Symology to the Customer to resolve the case. Cases at this stage will be automatically closed after 21 days if no response is provided by the customer, however 7 days before this a reminder e-mail will be generated.	Customer
Closed	The case is closed.	None

The SLA "clock" for target response and resolution times is active only during the applicable Business Hours and only while action is waiting on Symology.

Ordering & Invoicing Process

It is the responsibility of the party defined as the Licensee within the agreement to pay the fees associated with the Service. In situations where sub-contractors are operating on behalf of the licensee, it remains the Licensee's responsibility to pay the fees but they may choose to reclaim the costs from the sub-contractors where appropriate.

For all services, a valid Purchase Order which covers all necessary Fees is required before the commencement of the service.

Symology will invoice on receipt of the Purchase Order. Invoice terms are strictly 30 days from receipt of invoice.

Invoices remaining unpaid after 30 days may result in termination of service in accordance with the terms and conditions ("Managed_Service_Agreement.pdf").

Termination

Termination is in accordance with the provisions stated in the enclosed Managed Services Agreement document - “Managed_Service_Agreement.pdf”.

Data Restoration / Service Migration

See “Off-boarding Process” in Section 14 of this document.

Customer Responsibilities

The customer must ensure that only those users authorised to access the service attempt to use it. While it is the Hosting Support Team's responsibility to ensure that suitable access restrictions are in place, the customer must ensure that information (e.g. URL's, IP addresses, user names and passwords etc.) are not distributed to individuals outside of their user community.

See Roles & Responsibilities section within Service Management for further details.