Traffic Data Storage System Specification

Background
The County of Somerset has approximately 4,225 miles of road and needs to effectively manage and analyse its various traffic data sources from across this network.

Scope
The system will be web-based to allow access by other members of the team. Must be able to provide licences for 10 concurrent or 20 named users. It will allow the system administrator to set up new users who have restricted access to the system for example checking the data available and producing reports.

Requirements
The system will be set to have six different groups allowing different types of traffic/ travel/ transport data to be loaded onto it. It will have a mapping front end which shows summary data from all the groups and the option to filter the sites shown by group. Project groups, which can be created by the user will also be required, this is a named sub group containing sites from the different six main groups. A calendar page showing the data available and which can be used to select the information for reporting must also be included. Data is currently collected via counters from companies including RTEM, CA Traffic and Metrocount. The system must therefore be able to manage data in the following formats as a minimum - *.rtf, *.dmp, *.vbv, *.mdb and Excel.

The type of data in each group will be:

1) **SCC GPRS Sites** – Data being sent straight to the system from the automatic counter on site via a GPRS modem on site. The control instructions will be required from the counter manufacturer.

2) **SCC Manual Count Sites** - Manual counts – these will be uploaded on a spreadsheet and can be link counts with two vehicle movements and turning counts with a minimum of up to twelve vehicle movements. This data is manually uploaded to the system by SCC.

3) **SCC SID Data** This group will contain the data from our **S**peed **I**ndicator **D**evices. Mean speeds and 85% speeds will be calculated by the system and shown in reports. This type of report will also apply to the SCC GPRS Sites, SCC

Tara Archive Sites and SCC Telemetry and Adhoc Counter Sites groups. This data is manually uploaded to the system by SCC.

4) **SCC Tara Archive Sites** – This group will contain our archived data.

5) **SCC Telemetry and Adhoc Counter Sites** – Our radar counter information and continuously counted site data is stored in this group. This data is manually uploaded to the system by SCC.

6) **SCC Scoot Data** – Data from our traffic signal scoot loops are stored on this group. This data is manually uploaded to the system by SCC.

Site information will contain a name, site reference, grid reference, site description, bearing, speed limit, collection interval, channel names, for example eastbound and westbound. A minimum of four channels will be required for a dual carriageway. The classification scheme set in the counters on site will also be input to the site definitions.

The system will be able to read in all the different types of data from our counters, and link based data and Bluetooth based Journey Time Systems. Software suppliers will have to liaise with the counter companies, as listed above to obtain the different formats used. The system must be able to easily upload data without using utility software between the two.

The raw data input will require validation so that any irregular flows can be edited. Very high flows, long periods where the flows are zero and high or low variation in flows from day to day and week to week will have to be identified along with peak hour validation and other checks.

The reports below are the minimum required and which are most often produced and require to be calculated from the raw data input to the system:

1) Weekly report by day of week and hour of the day showing 12,16,18,24 hour flows and 5 and 7 day average flows and totals. The reports must be presented as a minimum in graphical and tabular formats, will be able to be filtered by vehicle classification where available.

2) Monthly Report showing daily flows by hour, 12,16,18,24 hour flows and 5 and 7 day average. The reports must be presented as a minimum in graphical and tabular formats, will be able to be filtered by vehicle classification where available.

3) Weekly and Monthly 5 and 7 day summary flows. The reports must be presented as a minimum in graphical and tabular formats, will be able to be filtered by vehicle classification where available.

4) Seasonal variation for the year to include the Annual Average Daily Traffic Flow. (AADT). Where there is not a full year of data the AADT will be calculated by the software. The reports must be presented as a minimum in graphical and tabular formats, will be able to be filtered by vehicle classification where available.

5) Per vehicle data, this is information on every vehicle passing through the site and includes vehicle class, speed, gap, headway and length. The reports must be presented in tabular or list format. The raw vehicle information will require filtering before any reports are produced due to the quantity of information collected.

6) Speed data reports showing data in speed bins for example 0-5mph, 5-10mph, 10-20mph etc with 85%ile and mean speeds calculated. The reports must be presented as a minimum in graphical and tabular formats, will be able to be filtered by vehicle classification where available.

7) Manual link and turning counts 12,16,18 and 24 hour flows. Diagram showing the total turning movements and a table showing a breakdown of the turning movements per 15, 30 and 60 minute time periods of the junction.

The **SCC GPRS Sites** group contains units which collect Bluetooth data which when matched gives origin/destination information of vehicles, speed data and journey time data. This will involve matching the Bluetooth records and allowing the results to be filtered to exclude any long journey times where vehicles may have stopped to deliver goods or gone shopping etc. The journey time data is made available on a map showing the different links that have been created and have different colours to indicate if there is congestion on the link or if it is free flow. The user will be able to access further reports and information regarding the links by clicking on the link. The links will be the route between two sites on the network.

The system will also be used to store site visit information and photos of the sites.

Hosting

The Customer requires a Software-as-a-Service (SaaS) solution, which the Supplier is responsible for hosting and fully managing either themselves or via a third party provider.

The system must be browser-based, browser and operating system independent and install no software on local machines.

The solution must be hosted in a tier 3 data centre and provide:

- Compliance with the 14 Cloud Security Principles: https://www.ncsc.gov.uk/guidance/implementing-cloud-security-principles

- Full Disaster Recovery
- Recovery Point Objective (RPO) 1 hour
- Recovery Time Objective (RTO) 4 hours
- Minimum support hours 8am - 5pm
- ISO 27001 Certified or equivalent
- ISO 9001 Certified or equivalent
- Have a robust approach to ensuring smooth service through the effective management of network traffic.

Training
Access to the system must be accompanied by training on its use to up to five staff members as well online user guidance manuals being available.

Implementation
An implementation plan is required to demonstrate how transition to a new system would take place, including key roles and responsibilities and what level of SCC involvement would be required for each stage.

Support
The system must be available 8 am to 6pm Monday to Friday, but may need to be accessed outside these hours. Support (online at no extra cost, and/or standard rate telephone) will be available 8am to 6pm Monday to Friday