10 point guide to the Command Support System

EMERGENCY COMMAND SYSTEM
* EMERGENCIES, MANAGED.

1 What is the **Command Support System,** why is it so unique and what benefits does it deliver to users?

The **Command Support System** is the world's first interoperable, distributed command and control system specifically designed to support incident management by emergency services and agencies. Key functionality includes GIS mapping, interactive display, database, asset management and communications technologies in a form which is robust, easily understood and easy to use.

These enable commanders at all levels of major incidents to build, maintain and share a common operational picture, to have a clearer idea of what resources they have available to respond to an incident, and to make the best decision in the time available.

2 Why was it created?

The **Command Support System** was created to satisfy the strong demand from emergency services and agencies around the world for an interoperable command and control system that went beyond dispatch and mobilisation, supporting their increasingly varied and demanding activities across a growing number and variety of different types of emergency, from large scale fires and terrorist attacks to massive coastal and inland flooding.

It was also designed to provide a software system that would support the new generation of control rooms and mobile command vehicles and integrating these with other mobile and distributed forms of working, such as Mobile Data Terminals and wireless laptops.

The ultimate objective is to give emergency commanders improved situational awareness of all resources available and deployed during incidents, so they can make better-informed decisions and manage and resolve incidents more effectively.

3 What technologies are included in the system?

The **Command Support System** combines and integrates a number of advanced computing, GIS mapping, display, communications, personnel and asset management technologies:

- GIS mapping which can be used across a wide variety of different mapping data formats
- Imagery management which integrates and shares available live-feed cameras and still imagery.
- Middleware integration which provides access to an organisation's existing databases - containing information on such geo-located features as hydrants, risks, personnel records showing competencies and roles.
- Despatch system integration - links to mobilisation systems
- Organisational asset management linked to and integrated with personnel and despatch systems
- Electronic whiteboard technologies to allow creation and sharing of sketches, maps, notes and photos.
- In future the system will support GPS tracking of assets, for live updating, monitoring and management of vehicles and personnel via GPS enabled Tetra radios

4 How has the **Command Support System** been developed?

The **Command Support System** has been developed based on **VectorCommand's** in depth knowledge of the common command issues and threats faced by emergency services and agencies around the world, combined with the specific knowledge and requirements of leading emergency services including the London Fire Brigade and European emergency management organisations.

VectorCommand staff have worked closely over many years with experienced senior staff from a wide variety of emergency services to determine the requirements and develop the functionality that is needed by commanders at all levels of a command hierarchy, for example, on the need to create a Common Operational Picture, create a structure for emergency management that follows command doctrine, and to anticipate future technical and national infrastructure developments.

A key testing and evaluation process has also taken place during the EU FloodCommand programme, when the **Command Support System** was used to support simulated multi-national and multi-agency management of search and rescue assets from national command centres in four different countries, in a simulated pan-European coordination centre and also in a simulated recipient nation.

5 How has the system been made easy to use for non-technical people?

Command Support System has been designed with a clear, logical visual interface with bold icons, drag-and-drop functionality and emphasis on touch screen technology. This makes the system intuitive and easy to use for non-technical operators. A series of pop up menus allow operators to use pre-formatted visual symbols (to record actions such as the setting up of cordons), while the drawing facility in the electronic whiteboard screen allows commanders to create simple sketch maps to indicate plans and to draw over maps or photographs and send them to other commanders - instantly - to avoid command confusion. The system also includes a wide range of flexible symbology icons for placement of assets on GIS maps.

All these functions can also be integrated with the flexible Organisational Asset Management system, so that icons showing command structures can be dragged and dropped onto the GIS map to indicate a commander's deployments and intentions.

6 Why is interoperability across multiple agencies such an important feature of the system?

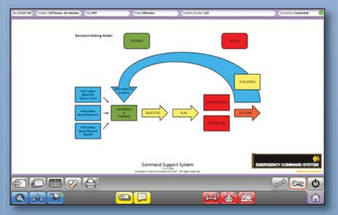
The lack of interoperability in incident command communications during multi-agency operations can hinder the efficient resolution of such incidents. Emergency services are having to work together much more frequently and emergency command within 'silos' is no longer an acceptable option. Organisations need to be able to communicate their common incident information and plans to create and share an accurate Common Operational Picture at all command points throughout an incident. **Command Support System** is designed to be easily linked to FireLink and FireControl and other systems.

7 Is it easy to adopt and integrate it into an emergency organisation's existing IT infrastructure?

Yes. The **Command Support System** has been designed for ease of adoption by emergency management organisations. Users can choose from a variety of options, from 'light' usage, with little or no integration with back office systems, to full integration with despatch systems and personnel, risks and other databases.

The system is a single integrated application with a consistent and logical look and feel. It supports a soft workflow process in the form of the user's decision-making model. It requires minimal training and is supplied with a comprehensive operator manual and user support.

Key functions of the Command Support System

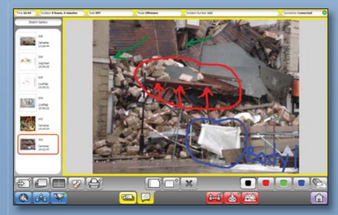


Decision Making Model

The **Command Support System** uses a clear decision Making Model on its home screen, with colour coding which is linked to the functional screen icons.

Imagery/Camera

Constantly updated live camera feeds, and still images uploaded from digital cameras, can be viewed through the system.
All images collected - both live and still - are stored and sorted in the Image Gallery for reference and later review.



Planning Board

This has a powerful combination of note pad and electronic whiteboard, allowing a variety of sketches, map overlays and screenshots to be viewed and annotated. Images can be distributed instantaneously to **Command Support System** users, contributing to the Common Operational Picture.

Web Browser

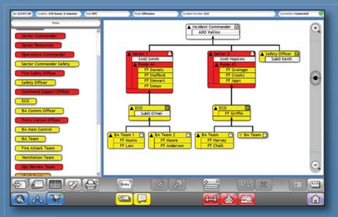
The web browser screen provides access to the Internet via Microsoft Internet Explorer. This allows access to search engines - for news, satellite imagery and mapping - and other useful online resources whilst staying within the **Command Support System.**

Objectives and Tasks

Provides a quick reference to all appropriate Standard Operating Procedures and also highlights any objectives that might be relevant to a specific type of incident.

Text and Video Conferencing

Allows instant communication with any user or groups of users currently logged into the **Command Support System.** All communications are recorded and time stamped, maintaining a complete communications history throughout an incident.



Organisational Asset Chart

Enables the Incident Commander(s) to keep track of all the units, personnel and resources involved. With a traditionally arranged and populated hierarchy of roles, apparatus and personnel, the Chart can be updated when any resource is added, deleted or moved within the command structure.

Incident Log

Provides two-way communication with all **Command Support System** users involved in the current incident. This screen also keeps a record of all messages that have been sent, thereby acting as a decision log for the incident.

Livemap

Essential GIS mapping data can be read in all common formats. Maps can be annotated with cordons, symbols, hazards and free hand sketches. Organisational asset icons can be dragged and dropped onto maps and distributed throghout a command structure. Assets can also be linked to GPS tracking.

8 What are the key functions in the first release of the **Command Support System?**

The key functions in the **Command Support System** are:

Imagery/Camera **Command Support System** supports the use of a wide variety of imagery - live camera feeds, stills photography, aerial imagery, road traffic cameras - which can be input into the system to improve the commander's situational awareness.

Planning Board Offering a powerful combination of electronic whiteboard and notepad facility, the Planning Board can be used to distribute map overlays, photos and sketches to all users logged onto the Command Support System.

Web Browser Provides access to Intranet, Extranet or other collaboration portals, as well as the Internet, giving access to news, satellite imagery and additional mapping - whilst staying within the **Command Support System**.

Objectives and Tasks This screen provides a quick reference to all appropriate Standard Operating Procedures for a particular type of incident. Pre-populated with all relevant information from users databases.

Text and Video Conferencing Instant and continuous communication with any users logged onto the **Command Support System**. Full communications' history retained througout an incident for later review.

Organisational Asset Chart Enables a clear picture of assets available and deployed, to be built, including units, personnel and other resources. Commanders can use the search facility to identify numbers of specific resources or personnel deployed within the entire command organisation, and look at individual units to check training and competencies of individual personnel.

Incident Log This screen records all messages both received and sent throughout an incident. This record of communication with all Command Support System users acts as a decision log for the incident.

Livemap Essential GIS mapping data can be read in all common formats and can be annotated with cordons, symbols, hazards and free hand sketches. It can also be linked to GPS tracking. The Livemap module provides the following GIS functions:

- The ability to load and manage all standard mapping and to allow seamless switching between all layers at different levels of zoom
- The ability to import layers of information pre-defined from external databases, including hydrant information, transport infrastructure, utility infrastructure, predicted flood plains, critical infrastructure information
- The ability to switch pre-defined layers on and off easily
- The ability for these layers to be updated by a web services system in maintenance mode to keep data current
- The ability to annotate the map with free drawing capabilities, circular zoning, freehand zoning, polylines, squares, circles and elipses
- A simple measuring tool
- The ability to drag and drop pre-defined symbols and assets onto the GIS to represent specific information or resources
- The ability to interrogate asset icons in individual layers to access asset data

This module is integrated with the Organisational Chart so that assets allocated are immediately available for marking on the map and integrating with the Planning Board (electronic whiteboard) so that the current Common Operational Picture can be captured, annotated and shared throughout an incident and a command hierarchy.

9 How do command and other staff learn to operate the system?

Command Support System is designed to be intuitive and easy to use, with a strongly visual approach and touch screen, drag-and-drop functionality. Comprehensive 'train the trainer' and operator training courses, an easy-to-use manual, user group meetings and tutorials, and other support activities are provided to customers.

Technical support - both online and telephone helpline - are also included in the ongoing support package.

10 Who are the launch partners for the the **Command Support System?**

- In the UK launch partners are the London Fire Brigade/London Fire and Emergency Planning Authority, Royal Berkshire FRS, Lancashire FRS, Hampshire FRS, Buckinghamshire FRS, Avon FRS, London Borough of Waltham Forest Civil Contingencies Unit and the UK Maritime and Coastguard Agency
- In Europe, Swedish Rescue Services Agency, Irish Coast Guard
- In Australia, South Australian Metropolitan Fire Service
- In the Middle East, Qatar Petroleum

A large number of fire and rescue, police, emergency agencies, oil and gas companies and other organisations are currently evaluating the **Command Support System**, in particular to support command and control software requirements for new mobile command vehicles, command centres and implementations of Mobile Data Terminals.