Part 3

Based on feedback from part 2 of my article I have decided to write a third and final part.

Let me start by saying that it is my firm belief that a totally integrated and scalable command and control system is required by the emergency services and is long overdue. Conversations with professional involved on a day to day basis with incident control seem to support my belief in that they don't really want to see lots of systems in use on the fire-ground that do not integrate or have no compatibility with other systems.

Over the course of my article I had the opportunity to view a number of incident command and control systems and based on some initial research I have some concerns.

1. Most of the software that I have seen to date is Microsoft Windows based; years of working with safety critical applications has led me to believe that the Microsoft Windows environment although offering ease of use a rapid development time is not currently resilient enough to be used for safety critical applications. Please do not think I am taking a knock at Microsoft it's just that I believe that there are better operating systems for safety critical systems.

2. Having looked at systems on offer from some of the suppliers of Breathing Apparatus I have note that whilst at least one supports incident command and control it does not currently support open standards and is therefore unable to interface to equipment from other manufacturers. Whilst probably offering a more than credible BA entry/exit control and incident command and control, by not offering support for other manufacturers equipment end users contemplating this type of system would effectively tie themselves into one manufacturer, this I am sure reduces their sales potential. I would encourage all potential suppliers of fire-ground command and control systems to adopt an open standards policy thereby allowing interoperability with other equipment or systems.

There is currently a standard for BA telemetry that was developed and implemented in around 1995, it is a UK standard although I believe it is now accepted by all countries in the European Union, as a co developer of this standard at the time it was acceptable and allowed a degree of future proofing, however there have been huge steps in radio based networking over the past decade (802.11, Mesh etc) that would offer higher data rates, thereby allowing real-time video, audio and telemetry data to be sent over the same network. I am reliably informed that this standard is due to be updated to allow the use of spread spectrum radio networking (used by Mesh and other modern radio networks). It is technically possible to update this standard whilst allowing backwards compatibility with current telemetry capable equipment.

Light around the corner:
Whilst researching information for this article I came across at least three companies (there may be others that my research failed to discover) that have developed command and control system that are open standards based. Although not currently supporting BA Telemetry the companies I spoke with seem to be considering this as a future option. All three companies use a Mesh type network infrastructure.

Is it an impossible goal?
The required hardware is already available off the shelf and the software although not exactly off the shelf is certainly within the capabilities of most software companies. The development of the type of system I envisage has to be led by the end users as I am sure that they don't want to be presented with a user interface that seems overly complex or intimidating, the secret to success for a usable fireground system is to make the system user friendly and wherever possible make the system look as closely as possible to the manual based system that it will be replacing.

What we actually gain by replacing the current manual based systems?
By using computer technology we give the incident controller a better picture of the incident and the status of all fireground resources (personnel, fire appliances etc). Having up to date and accurate information would allow the user to better manage the incident. Computer technology can of course fail but at major incidents there would be multiple systems all networked, incident data would constantly be updated on all the computers so that if one fails the up to date data is available on all computers. Current technology would allow live incident data (could include video and resource information) to be sent back to a centralised Fire Control facility.

Information on a incident by incident basis could be stored, this information could be incorporated into training to allow students to develop their command and control skills based on working through real incidents. Real incident data could be programmed into the next generation of systems by way of Artificial Intelligence (AI). Systems incorporating AI could make suggestions to the operator thereby giving the incident controller expert guidance. I do not advocate taking the decision making process out of the hands of the incident controller but I feel that accurate and up to date information enables the controller to better manage the incident.

Accountability the double-edged sword.
Any system that is able to store incident data allows suitably qualified people to analyze the data and interpret how effectively the incident was handled. Quite clearly if subsequent analysis demonstrates that the incident was handled in line with all current procedures then all is well if however there are problems relating as to how the incident was handled then we open the door to liability issues.

Conclusion:
It seems that although there are a few suppliers of command and control software I have only found three that support open standards and also claim to be willing to incorporate BA Telemetry. I would suggest that BA manufacturers beat a path to their door, as it may be **the only way to go!**

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