report

meeting	**NOTTINGHAMSHIRE & CITY OF NOTTINGHAM FIRE & RESCUE AUTHORITY**	
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REPORT OF THE CHIEF FIRE OFFICER

VEHICLE MOUNTED DATA SYSTEM

1. PURPOSE OF REPORT

The purpose of this report is to inform Fire Authority Members of the progress of the Vehicle Mounted Data System (VMDS) Project Phase 1 and to detail the Phase 2 enhancement of an Automatic Vehicle Location (AVL) System.

2. BACKGROUND

Members will recall that as a result in the growth of operational risk and the need to provide details of these risks to Firefighters at an incident, it was decided that a system to provide this directly to the cab of an appliance was the best way forward. As a consequence of this Members gave approval for the provision of VMDS. This was subject to a report to the Fire Authority when approval to provide a system was given. A budget of £300k was set, made up of £200k in year 2003/04 and £100k in year 2004/05.

3. REPORT

Phase 1

3.1 The first phase of the project was to provide an in-cab data solution together with the means to manage the data to be displayed in the cab centrally. This system was to be linked to the existing command and control system to allow messages and emergency incident information to be sent directly to the appliance using Orange GPRS as the bearer for the messaging.

Progress

3.2 All thirty-six first line pumping appliances, four rescue tenders and two aerial ladder platforms have been fitted with the equipment. All stations have been trained in the use of the equipment by the VMDS team members and are all now fully operational including the communications element. Following some early reliability issues with the Orange GPRS, we have now got a reliability in excess of 99.7% on the communications element.

3.3 The central data management process has been running since June 2004 with the VMDS team running the system. The Administration Team within Information Services, Computer Aided Graphic Operators (CAD) and the Geographic Information System Operators (GIS) are inputting data supplied by Districts and from other sources. This is proving to be a reliable and robust system.

3.4 The method by which appliances get the updates from the central data source to the appliances is by sending the data over the Services Wide Area Network (WAN) onto a dedicated computer at each station. The data is then wireless transmitted to the appliance. This was installed at all wholetime crewed stations during July-September 2004, as the infrastructure was already there. However the fully retained stations WAN connections had to be improved to enable this to occur.

3.5 The I.T. Section had a separate project to upgrade the connections on the Service's wide area network to a Broadband system. This has enabled the VMDS team to centrally manage all the different types of information at Headquarters and send this information out to the stations simultaneously. The information once at the station is then wirelessly transmitted to the appliances. This means that the information available to operational crews is consistent on all appliances throughout the service. The Broadband has been completed and is now fully installed and operational at all wholetime and retained stations.

Contribution of Other Sections of the Service

3.6 Without the contribution of many people and sections of the Service this project could not have been the success it is proving to be. Transport, Communications, I.T. and the representative bodies have all been involved in the planning and implementation stages of this project and without their help and co-operation in solving issues and getting work completed we would not have completed Phase 1 in the time-scales that have been achieved.

Phase 2

3.7 Now that we have completed Phase 1 of the VMDS we are in a position to be able to examine the potential to make better use of the resources available to respond to incidents, by the installation of Automatic Vehicle Location (AVL).

Automatic Vehicle Location (AVL)

3.8 Automatic Vehicle Location is the ability of the VMDS to send a position report back to the Control Centre to enable the operator to see on a map the location of all of the appliances at any time. This data is transmitted at preset intervals depending on what the appliances is doing. If it is stationary in the station it transmits this once and then waits until the appliance moves before it re-commences transmissions. Once an appliance is moving it sends a signal back to Control every time it has moved a set distance of 50 metres or every 30 seconds if the appliance is travelling slowly. This would then be displayed on a map at the Control Operators position. This map would show the actual locations of all of the appliances. This would then allow the Control Operator to select a resource to mobilise based on its actual location with regard to an incident, rather than mobilise within a station area as we do at the moment.

3.9 The hardware that has already been installed into the appliances as part of the VMDS including the communications that we currently are using for messages to and from the VMDS could be utilised to provide the AVL data transmissions to Control. This uses our VMDS which already has the ability to transmit the AVL data, but needs to be enabled within the software on the appliance. This is a simple matter of switching on some features that we have not been using but are there anyway as part of the supplied system. The AVL will make even greater use of the VMDS and will show appliances, call signs and status on a map in Control.

3.10 The advantage of this is that the operator can see which resource is closest to an incident and dispatch that resource to the incident. Currently the mobilising system shows appliances that are available within a station area with no regard to its actual position. Therefore AVL will enable the Service to be able to respond to any incidents using the nearest appliances. It will provide a faster more efficient use of resources and therefore improve the service to the public.

3.11 For operational crews this will ensure that the nearest appliance is always mobilised to an incident and Control will be able to advise them where their support appliance is. They may need urgent assistance for a developing incident for example.

3.12 The AVL data can be transferred in our Management Information System. This data consists of the grid reference (giving the actual location), speed and direction of an appliance and the data is transmitted at a frequency to suit the speed, distance travelled and status of the appliance. The data can be analysed and used to support the IRMP. The data could be used to refine the details dealing with operational response within the IRMP. The data can also be used to identify any delay points in the road network, which in turn can be used to update the FSEC data and provide greater accuracy for response modelling.

3.13 The timescale for delivery of this AVL solution is about three months from placing the order.

4. FINANCIAL IMPLICATIONS

4.1 As the AVL will be utilising the existing equipment installed through the VMDS project, the set up costs are reasonably low. An initial estimate of £19k has been put forward by the installer, Assetco Solutions.

4.2 The £19k costs can be found from within the existing contingencies of the IT budget.

5. PERSONNEL IMPLICATIONS

By providing the AVL we will be able to give our Control Staff the opportunity to develop their skills in an area that will be included within the proposed Regional Control Centre.

6. EQUALITY IMPACT ASSESSMENT

An initial Equality Impact Assessment has revealed that there are no direct equality issues associated with this report.

7. RISK MANAGEMENT IMPLICATIONS

7.1 The implementation of VMDS has had a positive impact on the risk management of the Service. The system is being used centrally to provide timely, accurate risk information to crews. The information is available to any appliance throughout the County. The provision of other types of data such as ‘Autodata’ a programme that identifies risks in vehicles such as airbag locations, gas cylinders for curtain airbags, battery locations, and safe procedures for isolating all of these items, have enhanced the ability of crews to make dynamic risk assessments at Road Traffic Incidents. This has reduced the risk the organisation is exposed to by improving the management and control measures at operational incidents.

7.2 We have had positive feedback on the usefulness of the VMDS from crews. They recognise the benefits of VMDS and that the system is there to help them deal with incidents. The crews are also giving the team feedback on the type of developments they would like to see in the system in the future. We have also seen an increase in

the production of site specific risk data supplied from stations. The VMDS has generated this increase as crews can see the benefits it can provide for them.

7.3 If we take up the option of developing the VMDS to include AVL, we will be better equipped and able to deliver an efficient service. Therefore the risk to the public will be better addressed. We will also be able to send the nearest appliances reducing the travel distances and times for our appliances.

7.4 The inclusion of AVL will mean that we will be in a better position to assess the risk as part of our IRMP process and have more accurate data to base the decisions faced by the Service in meeting the needs of the public and improve the our efficiency in response to incidents.

8. RECOMMENDATIONS

That Members approve the implementation of Phase 2 of the VMDS, the provision of the AVL solution.

9. BACKGROUND PAPERS FOR INSPECTION

None.

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CHIEF FIRE OFFICER