Integrated dispatching first for ASTRID

A Nokia TETRA system incorporating an advanced Computer Aided Dispatch (CAD) system is bringing new levels of efficiency to Belgian police and emergency services.

As well as being the first TETRA-IP nationwide TETRA network for public safety, ASTRID is also the world's only system in which radio, telephone and CAD are fully integrated into a single environment.

Benefiting police and public
With the state-of-the-art CAD system, public services can create and consult data when and where needed, avoiding unnecessary duplication of data or multiple data entry. A wealth of supporting information and geographical data are available at all times to help dispatchers make the right decisions. Using data communication over the radio ensures that the information gathered and distributed is accurate, with voice only being deployed when urgency is required. The CAD system's main benefit is that it lets the dispatcher identify the best available resources and choose the fastest, safest route to that location, protecting both the public and the agency's personnel. Additionally, automation of the dispatching process leads to faster response times and higher incident handling capacity.

Information at your fingertips
Designed by Nokia application partner Intergraph Public Safety (IPS), the ASTRID CAD system puts all relevant information at the operator's fingertips. The control room calltaker's screen shows the address and map details of emergencies, as well as the locations of the nearest available units even before the call is answered. The dispatching officer can assign the task to a unit by simply clicking a few buttons on the screen, automatically sending the address, task description and other critical details to the unit's mobile terminal and radio. The result is a faster response and more efficient use of resources.

Integrated dispatching brings it all together for ASTRID
Intergraph Public Safety's CAD system has four main windows: the event form, which displays the information on the event the dispatcher is working on; the pending event list with the events that have no units assigned to it yet; the unit status monitor that displays the logged-on units and their status; and the map window.

The integrated, intelligent map display is very fast and adaptable, updating itself whenever commands are executed. In addition to streets and highways, the map can display building footprints, hazardous material flags, fire hydrants, power lines, rivers, lakes, railway lines, and much more. These features can be made "smart" by linking them to extensive database records for immediate data recall. The operator can easily query the features by clicking on map symbols.

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Vehicle locations are shown automatically on the map. Vehicles are fitted with a GPS based Automatic Vehicle Location (AVL) system, which uses TETRA SDS for communicating with the CAD system.

Integrating telephone, applications and radio

The entire system is brought together by the Nokia Communication Interface Server (CIS), which ties radio, telephone, AVL and the CAD system into an integrated environment.

When taking calls, the Integrated Telephone window is always open alongside the CAD windows. Integrated Telephone uses the Telephony API from Microsoft Windows (TAPI) to communicate with the telephone system PBX, allowing the calltaker to operate the telephone using the same dialogue driven interface as used in CAD.

The radio system is also presented as a single, consistent user interface for the dispatcher. The CAD system knows the vehicle's radio identity, and maintains the link between units and their radios. This lets the dispatcher set up calls either through the radio identities or directly via the unit. Radio integration in CAD supports both group calls and individual calls.

The AVL system provides the dispatcher with information on the location of field units. Position information from the GPS devices in the vehicle is transferred via a Nokia CIS Server to the map application.

The routine communication functions of the Nokia TETRA System are utilized through the Intergraph CAD system, allowing the dispatchers to perform their daily tasks by using just one application.

Rapid connectivity with TETRA IP

Every patrol car is fitted with a laptop PC running I/Mobile provided by Intergraph Public Safety. This sends data from the field via the TETRA system to CAD using TETRA IP. Units can send patrol messages to the dispatcher in less than a half second. The I/Mobile software also includes an intelligent map with an auto-routing feature.

Nokia TETRA System packet data is fully compliant with the TETRA Common Air Interface standard (European Norm EN 300 392-2 V.2.3.2) and TETRA Interoperability Specification TIP v3 part 5 Packet Data.

Partnering for progress

Intergraph Public Safety is a member of the Nokia TETRA Wireless Solution Partner (TWISP) program, which provides Nokia partner companies with the very latest information on developments in the Nokia TETRA system. TWISP focuses on messaging and fleet management solutions, recording systems, voice mail systems, telemetry systems, system integrators, mobile data terminal manufacturing or special applications relating to Fire and Rescue and Police Forces.

New communications for a new police culture

ASTRID and its CAD system are integral parts of the new police organisation in Belgium, which is integrating local and federal police forces into a new national force.

One force operating at the local and federal levels gives the public a better service and needs high quality communications to meet public expectations, says Antoine Duquesne, Belgian Minister for the Interior.

Nokia is the first vendor to bring IP packet data capability to TETRA networks, which means compatible interfaces for access to IP-based applications and services with continuous connectivity when it is needed most. This is a bonus for ASTRID, where data makes up an estimated 80 per cent of daily management information.

The system led to ASTRID being recognised with an award as the Most Innovative TETRA Service of the year 2000 at the third TETRA World Conference.

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