

# VectorCommand's EU FloodCommand project delivers pioneering interoperable emergency management

The EU FloodCommand project, set up to improve the pan-European response to massive coastal flooding, has now concluded successfully, with all objectives met. Stephen Prendergast summarises the achievements of the 18-month programme.

Massive coastal flooding is an ongoing threat to the UK, as the North Sea storm surge early in November 2007 demonstrated. The surge, up to 3 metres (10 feet) high, travelled down the North Sea, threatening to flood North Yorkshire, Lincolnshire, Norfolk, Suffolk, Essex and the north Kent coast. A similar storm surge in 1953, with a height of 3.2m (10ft 6in) caused catastrophic coastal flooding and the deaths of 307 people in the UK and 1835 people in the Netherlands.

Fortunately, the November 2007 storm surge abated. Flood defences were not overtopped, and the Thames Barrier, built to prevent a repeat of the 1953 disaster, protected London.

Should a major coastal flooding event of a similar or larger scale to the 1953 storm surge hit coastal European states, individual nations would struggle to cope with the massive loss of life and damage to property and infrastructure that would result. Normal emergency services and rescue resources would have to deal with enormous demands for fast, effective action over large, densely populated cities and sparsely populated rural areas. In all probability a pan-European response would be required, with European Union Member states offering search and rescue and other resources to help fellow members at a time of great need.



Storm surge barriers in the Netherlands, part of an extensive flood protection system built since the 1953 flooding disaster.

But how would such aid be offered, coordinated and managed? A process for offering mutual emergency assistance between EU Member States already exists. This is the EU Civil Protection Directorate, with a Monitoring and Information Centre through which mutual aid is pledged and coordinated.

A key issue, however, is not just the offering of mutual aid but how such aid between EU Member States should be organised and used most effectively, to ensure maximum efficiency in times of crisis. Merely providing aid is not enough. Resources such as helicopters, planes, boats, logistics support and personnel from different countries, with different languages and diverse command, control and communications systems, need to be controlled and integrated into the emergency command, control and logistical systems maintained by the nation receiving the aid.

These are some of the critical emergency management issues that the EU FloodCommand programme set out to address. EU FloodCommand is a research, technology development and command exercising project sponsored by the European Commission and VectorCommand Ltd. Partners in the project were the UK Maritime and Coastguard Agency, the Swedish Rescue Services Agency and the Irish Coast Guard.

With the UK, Ireland and Sweden as partners, the EU FloodCommand project was designed to explore opportunities for improving pan-European emergency coordination through advanced, interoperable command and control technologies. It was also set up to develop and test the concept of pan-European Response Modules (standardised, commonly recognised and agreed packages of emergency response capability) for improving the effectiveness of response to catastrophic coastal flooding.

The project brought together civil protection and maritime search and rescue experts from across Europe via a comprehensive programme of conferences, workshops, exercises and technology development.

The technology chosen to support multi-national and multi-agency coordination and command of diverse rescue assets throughout the European Union was the EU Command Support System. This system is based on the core technologies and functionality of VectorCommand's innovative new Command Support System, chosen by London Fire Brigade and a growing number of UK fire services, local authorities and other emergency management organisations around the world.

The system combines GIS mapping, organisational asset management, messaging, imagery transfer, incident logging, text and video conferencing, an electronic planning whiteboard, plus middleware access to risk and other databases, in one easy-to-use, touch screen-



The simulated "Bulgaria" command room for contingent commanders from Ireland, Sweden, the Netherlands and the UK. Commanders used the EU Command Support System to coordinate and manage a simulated pan-European response to massive coastal flooding of Bulgarian coastal cities following a Black Sea tsunami.

based system. The system is also highly mobile and flexible, capable of being used on wireless ruggedised laptops in the field as well as in mobile command vehicles and fixed command centres.

Response Modules (based on the concept of Team Typing) are pre-determined and agreed packages of response capability created to offer self-sufficient support for specific missions such as Aerial Rescue Using Helicopters, Aerial Search Using Fixed Wing Aircraft and Surface Water Rescue. Having such pre-determined stand-alone Module packages simplifies the process of requesting and providing mutual aid through the EU's Monitoring and Information Centre. (The validity of the Modules approach was vindicated recently, with EU Member State Water Purification Modules having been successfully deployed to Burma following the recent cyclone).

As part of the project two validation exercises were held. The second, more ambitious exercise was designed to test and validate the incident command and control software (the EU Command Support System). The disaster simulation was run using VectorCommand's Training and Exercising System. The coordinated response to a simulated tsunami in Bulgaria was exercised successfully across seven emergency command centres in four different Member States (UK, Sweden, Ireland and the Netherlands) in April 2008.

The final event in the EU FloodCommand programme was the concluding conference held in Stockholm, Sweden, in June this year. The keynote speaker was Michael Brown, the former head of the US Federal Emergency Management Agency (FEMA) at the time New Orleans was hit by Hurricane Katrina.

A series of flooding, emergency command and climate-related presentations were complemented by panel discussions and presentations from Rod Stafford, the EU FloodCommand Project Executive, and Dr Mike Griffin, the Technical Director of VectorCommand. These covered the findings of the project, the lessons learned, and the development of Maritime Search and Rescue Modules and the EU Command Support System. The conference plenary sessions were complemented by technical demonstrations of the EU Command Support System and the Training and Exercising System.

The lessons learned from the inaugural conference, both command exercises and the technology development programme, now leave a valuable legacy from which all partner nations and other EU Member States can benefit. Maritime Search and Rescue Modules have been defined – for Aerial Rescue Using Helicopters, Aerial Search Using Helicopters, Aerial Search Using Fixed Wing Aircraft, Surface Water Rescue, and Utility Transport Using Helicopters.

The EU Command Support System has been tested successfully in a simulated multi-national context and will now be adopted by the project partners. There is growing interest in the system among other emergency services and civil contingency organisations throughout Europe who are interested in acquiring the system to enhance their own multi-agency and multi-national emergency response capabilities (not just for flooding but for all emergencies requiring a multi-agency response). The project Executive Report has been published and is available free to anyone who would like to request a copy.

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Training and Exercising System was used to manage the pan-European exercise across four different countries in seven different command centres. Participants in all centres received simultaneous injects such as news clips and emails, creating a high degree of realism.