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SAFIR

Work Package 10

**DELIVERABLE D10.5.2: 6 Monthly Fire Forest
Pilot activity report M24**

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Abstract: This is the 6 monthly activity report for the forest fire pilot work package, led by JRC. Pilot development will take place with French fire fighting authorities, with the prototype GIS application providing voice-enabled management and use of geographic information by field-based fire fighting units.

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1 Executive Summary

This pilot aims to develop a voice-enabled GIS for response to forest fires. Forest fire fighters make extensive use of geographic information in their response to emergency events, but the use of GIS is often limited for reasons of portability, ease-of-use and other logistical constraints. The underlying philosophy of this pilot is that the use of voice-based commands can remove some of the barriers that inhibit the widespread use of GIS in the field during a forest fire event. Commands should be simpler, more intuitive and more in common with the culture of fire fighters,, for whom vocal communication is an essential component of their activity.

JRC as work package leader has extensive experience in GIS application development and in the forest fire domain. Voice Insight provides the vocal interface for ArcGIS, which JRC will customise according to the pilot requirements. JRC are working closely with local stakeholders in Southern France to support this pilot, including operational fire brigades and the principal research organisation (CEREN) in this area.

The effective start of the pilot activities has been delayed. Now that additional recruitment has been completed, we hope that these delays will be recovered and that the pilot will be successfully implemented as planned during the 2006 fire season.

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2 Overview of pilot


Analysis of use-case scenarios within fire brigades highlighted two main scenario types - forest fire alert and forest fire fighting. Of these two, it has been decided to concentrate the pilot development on fire fighting activities, where the potential benefits of voice access to geographic information are considered greatest and most immediate.

The Joint Research Centre (JRC) coordinates the pilot development, providing GIS application development expertise in the ArcGIS platform and thematic expertise in forest fires through the INFOREST action. Voice Insight provides the necessary expertise in VQL technologies.

JRC have established links with CEREN (Centre d'essais et de recherche de l'entente) in Aix-en-Provence, France for the purposes of the pilot development. CEREN is a multi-departmental forest protection research organisation, funded by the French interior ministry, and which has excellent links with operational fire brigades for 14 Departements in southern France. CEREN shares premises with the main training facility for fire fighters in this area. They have detailed knowledge of the typical requirements for informatics tools, specifically GIS, and participate in actual responses to large fires with their own vehicles. Thus they are an ideal partner in providing an environment for pilot testing and development which very closely matches that of an operational unit, without the risk of disrupting crisis response activities. This is a very sensitive issue and important to recognize, particularly at the early stage of pilot developments.

The pilot to be developed in this phase will essentially provide a mixture of standard GIS data and navigation tools, together with a set of custom functions, at the disposal of the COS (Commandement des Operations de Secours), which is a role usually performed by the leader of a fire response group (Groupe d'Attaque in the first instance). This role requires rapid gathering, recording and interpretation of geographic information upon arrival at a fire scene. This is usually performed whilst manoeuvring a 4x4 vehicle. The pilot will place a voice-enabled tablet PC running a customized ArcGIS application within this vehicle, allowing the fire-boss (COS) to enter and consult information as the fire scene is surveyed. If necessary, the tablet PC can be detached and used on foot.

Information gathered includes the location and dynamics of the fire front, interpretation of topography (important to understand possible fire spread) and assessment of meteorological conditions (most importantly wind direction and strength). These are traditionally sketched onto plasticized topographic maps – the pilot will provide this functionality in a GIS. All interaction with the GIS will be by touch (pen) and voice commands, i.e. keyboard and mouse will be absent. The process is typically very dynamic, with a pyramidal organizational structure depending on the extent and severity of the fire. As a consequence, the role of COS can be transferred upwards. Geographic information gathering in this context needs to be quick, concise and well structured. The use of a voice interface is intended to support these criteria in what will typically be a very challenging environment – noisy, smoky, hot and dangerous..

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3 Significant accomplishments

3.1 Achievements

The principal achievements have been to finalise the recruitment of a GIS application developer for the project by JRC and to establish a relationship with CEREN, whose involvement in requirements specifications and pilot logistical support is essential.


3.2 Main events/activities

Prior to the start of the 2006 predicted fire season (June-September), JRC have held 2 meetings with CEREN, including a joint visit to CEREN/SDIS 13 (Departmental operational control centre for Bouches du Rhone in Marseilles), 3-4 April. As a result of this visit, where the VQL concept was very well received, it has been agreed that JRC can participate in the forest fire full scale simulation exercise for fire brigades during May. This will provide valuable information on the operational and environmental constraints of field based use of the GIS prototype.

3.3 Publications/Documentations/Demonstration results up to date

During period M19-M24, the following documents are delivered (in M26)

- ❑ D10.5.2 6 Monthly South France pilot activity report M24, due M24
- ❑ D10.5.1 Pilot Plan; due M24, delivered M26

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4 Status of pilot according to Gantt

With respect to the GANTT planning, activities have been shifted with a 2 months delay to deliverables due at M24. We experienced a delay in recruiting additional staff, but this was completed on 1st March so that we now have a full-time resource dedicated to technical development of the prototype. Given that we are now accelerating rapidly, we hope to realign the tasks and milestones to the original planning by M30.

5 Open Issues and strategy to resolve the open issues

It is not possible to work directly with an operational fire fighting unit, since the perceived risks of disruption of existing procedures is considered too high at this pilot stage. Our strategy is to work with CEREN, who have comparable vehicles and who are present during fires in a shadowing role anyway. This ensures we run the pilot in an environment that is as realistic as possible to that experienced by the fire fighters themselves.

6 Next Steps

6.1 Actions by Partners


- JRC to acquire necessary hardware (orders submitted April)
- VI to provide VQL training to JRC staff (May)
- VI to provide VQL software to JRC (April)
- Finalisation of pilot planning by JRC (end April)
- Internal deliverable on functional specifications (end April)
- Forest fire simulation exercise participation (JRC May)

6.2 Planning Impacts

There are no special impacts on original planning.

7 Conclusions

Despite a delayed start to our activities in WP10.5, we are now seeing a significant acceleration in the work and a positive response to the prototype concept by the stakeholders. We have used the delay as an opportunity to refine some of the original assumptions of the prototype and aim to meet the objectives as planned by M30.

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8 Reference Documentations

DELIVERABLE: D.1.2.3: Special User Requirements Civil Protection: Urban and Forest Fire Brigades, François CAPMAN (Thales), Andrea CAMIA (JRC), Alessandro ANNONI (JRC), 14th April 2005
