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6 Monthly ICE Pilot Activity Report

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Document Summary

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Abstract: This document resumes the WP9.1 activities for the WP9 pilot "Information Center EHS (ICE)" in the period of month 19 to 24. Focus is the development of the ICE core functions and the enhanced user communication part of the preliminary M18 pilot. Pilot ICE is detailed specified in the preceding deliverables of WP 4 (D4.3.1up to D4.3.10). Like in the previous deliverables focus is again the WP4 special professional user fire brigade.

In the first project phase we developed mainly the basic technology (system architecture and a suitable voice-activated access unto the Service Provider). In the period M19 to M30 we concentrate more on the specific requirements of our pilot users. Focus of M19 to M24 is to enhance the user – ICE communication. This is done in both communication channels (the vocal as well as the graphical user interface).

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1. EXECUTIVE SUMMARY

1.1 Introduction/Purpose of the deliverable

The purpose of this document is to highlight the WP9.1 activities for the project period M19 to M24 concerning the special user pilot “Information Center EHS” (ICE). This deliverable helps to better judge not only the related WP9.1 developments, but also the closely connected the WP12 activities. The development focus was both on the vocal as well as the graphical user – ICE communication. Pilot ICE is detailed specified in the preceding deliverables of WP 4 (D4.3.1up to D4.3.10). Like in the previous deliverables focus was again the special professional user fire brigade. ICE intends to deliver a speech enabled access to hazardous substance information for those emergency response forces.

1.2 Executive Status Description

The basic developments of the preliminary pilot ICE are in-depth described in the deliverables D4.3.1 up to D4.3.10. This activity report (D9.1.2.1) for the enhanced pilot ICE now delivers an insight into the current development steps. That helps to understand how the enhanced application ICE will look like.


1.3 Executive Analysis

SAFIR special user pilot “Information Center EHS” aims to bring new requirements and consequently helps to improve the overall jointly SAFIR SDK. It does this by applying the SDK, determining its usability and requiring new or enhanced functionalities, finally to emerge and improve the SAFIR SDK.

In the first project phase we developed mainly the basic technology (system architecture and a suitable voice-activated access unto the Service Provider). In the period M19 to M24 we concentrated more on the specific requirements of our pilot users to enhance the user – ICE communication (vocally as well as graphically).

1.4 Executive Conclusions

The different facets of the preliminary special user pilot ICE were already described and the basic technologies set up properly. In the past period we concentrated more on enhancing the user friendliness. To increase the user acceptance we have to work on voice-related aspects as well as parallel on an improved graphical user interface. These issues will be covered in WP9.1 (Fire & Civil Security) and in WP12 (Development Support), supported by the complementary work package WP11 (Pilot Support) and documented in the regarding continuative deliverables.

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2. OVERVIEW

WP9 is designed to continuously suit the preliminary M18 pilots to the actual market demands. WP12 thereupon adapts the related technology. Thus improves the overall developments and SAFIR SDK by enhancements in quality and in adding complementary functionalities. The user feedback unto the initial/preliminary pilots has to be analyzed and the technology correspondingly to be corrected. Thereupon the required adaptations have to be carried out. Aim is particularly to allow voice activation where it enables desired functionalities that were not available without voice activation.

Scope of the voice activated Information Center EHS ICE is to bring enhanced material safety and chemical data from the industrial to the eGov domain and the related emergency forces in the field. "In the field" means in this context mobile and "hands and eyes free" where suitable.

Application ICE enhances the access to safety relevant information. It makes hazardous substances data remotely and via voice available. As the data transfer standard format XML is used the attached information could also be made available for complementary SAFIR applications (e.g. PHS Info).

Background is that not only fire brigades have a demand for a hands-free information source for EHS related data. One of the aims in the second SAFIR phase is to enable the related data access also for these users. Intended is to expand the data transfer also to non-SAP based processors, realized by selecting the mentioned open data exchange format XML. This will give new user groups (health sector, civil security, police and more) access to data momentarily only accessible for industrial customers. The system will continually be adapted to the SAFIR main SDK architecture.


After the 18 first months a very preliminary prototype of Information Center EHS (ICE) was available (as a result of the related WP4 developments). The purpose of WP9.1 and WP12.4 is to enhance this preliminary prototype and to validate assumptions through the concerning user feedback. Special users group targeted is the emergency response domain, mainly fire forces. In this phase we primarily adapt our application unto the needs of our pilot users BASF plant fire brigade. This unit is the ideal multiplier the fire brigade domain. The BASF plant fire brigade in Ludwigshafen, Germany is responsible for BASF worldwide, as well as head of the German and the European wide fire brigade networks.

Gradually proceeding discussions with these core pilot users have shown an increasing demand of a more intense graphical ICE - user interaction. That means that one enhancement was to increase the ICE GUI parallel to the vocal user interface. A parallel feasibility study evaluates at the moment the potentials of remotely obtainable Safety Data Sheets in the security domain. Other topics are mobility, local data management on client side and optimizing the method of identifying hazardous substances.

In the case that the ICE client loses the contact to its server (e.g. as a fire fighter enters a warehouse with hazardous substances), the user still needs a well-defined locally stored data. Required is a strategy to download the required subset of information before. The purpose is to enhance the pilot ICE correspondingly by adding a suitable local data management. This enables the user to access already called data sets, but also to a certain set of information relevant to their typical hazardous substance information demand. Beside characteristics and hazards this are personal protection, intervention actions first aid and precautions for product recovery and after intervention. This cyclic proceeding and the support from WP9.1 gives the possibility to improve the system, upgrade regarding user feedback, correct faults and remedy deficiencies. Continually increases the system quality. This could be increasing the user-friendliness or optimizing the hit rate when identifying a chemical substance.

Based on the input of WP9.1 (Fire & Civil Security) in WP12 (Development Support) not realized or advanced functionalities have to be developed and implemented (e.g. to enhance the core business logic). One of the main topics is the local data management. Out of different potential possibilities to store data locally on the client side the most suitable has to be selected. Data management could be for example done on a client database or discrete data files can be stored on the client side. Implementing developments in pilot ICE hardware. After all internal (first tests by the developer himself than within the internal project team) and external tests (by potential users) ensure a high quality level. The tests and the implementation of the related outcome will be in performed in WP9.1.

Development and iteration support is also executed in the complementary work package WP11 (Pilot Support).

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3. SIGNIFICANT ACCOMPLISHMENTS

3.1 Achievements

Beside the fact of improving the voice activation technology/ software development kit (SDK) one of the main outcomes was to make application ICE multi-lingual. This was an evident user requirement to make ICE utilizable for German end users.

A further big user requirement was the availability of an enhanced graphical ICE – user feedback. That made it inevitable to develop a suitable graphical user interface parallel to the vocal interface.

3.2 Main events/activities

Main WP9.1 related events during the M19 to M24 period were:

- Bilateral direct contacts to the potential ICE end users
- Bilateral direct contacts between the concerned SAFIR partner companies
- Evaluation of the user demand parallel to the SAFIR User Advisory Board Meeting in Brussels, 29.-30.10.2005
- WP9 sessions parallel to the WP12 Technical Meetings in Amsterdam, 06.-07.10.2005 and 31.01.-01.02.2006
- Several conference calls

3.3 Publications/Documentation/Demonstration results up to date

BASF IT Services and the other WP9.1 partners are implementing the SAFIR pilot ICE and therefore users of the SAFIR SDK. Via the WP9 pilots we are indirectly demonstrating the economic usability of the SAFIR SDK towards the external market.


The WP9.1 partners are in steady contact with the technology partners and help improve the SAFIR SDK therewith. We are also in straight contact with the pilot users. The demonstration results help to improve our pilot.

Progresses are reported in the concerning deliverables (documents, activity and plan reports):

Deliverables for WP4 were (finalized in time until month 18) D4.3.1 "Generic Needs", D4.3.2 "System Design", D4.3.3 "ICE Specifications: Interfaces and DB", D4.3.4 "Database Object Model", D4.3.5 "Database Safety Concept", D4.3.7 "QA Procedures", D4.3.8 Early Prototype "Voice Activated EHS Info System" and D4.3.9 "Blueprint for commercial prototype".

Deliverables for WP9.1 are D9.1.1 "Pilot ICE Plan Report" and D9.1.2.1 and D9.1.2.2 – "6 Monthly ICE Pilot activity report" (expected results at M21, M24 and M30).

Deliverables for WP12 are D12.4.1 "Documentation ICE" (including D12.4.1.1 "User Communication", D12.4.1.2 "Functionalities", D12.4.1.3 "Local data management") and D12.4.2 "ICE Pilot Enhancement" (first of the core functionality, later of the advanced functionalities). Results are expected M24 and M30.

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4. STATUS OF PILOT ACCORDING TO GANTT CHART

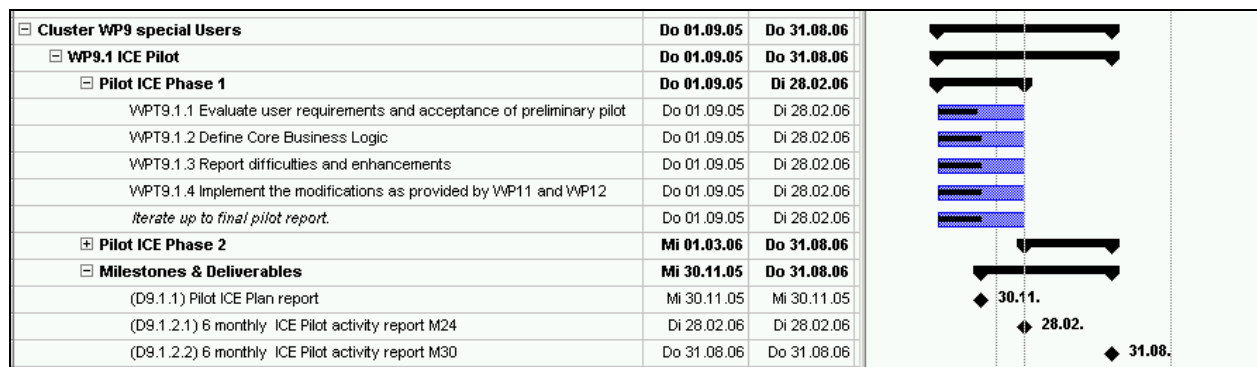


Figure 1: WP9.1Gantt chart M19 to M24

The phase WP9.1 Pilot ICE Phase 1 was carried out as planned.

Work package task WPT9.1.1 “Evaluate user requirements and acceptance of preliminary pilot“ is a consecutively process. In iterative steps we are continuously adapting application ICE into the users needs.

This led us on the frontend side to the user demand of a stronger graphical feedback, facultative to the parallel selectable vocal ICE – user interaction. It has shown that depending on the type of user and the situation he is momentarily operating in it makes sense to have the ability to switch the communication channel. Thus the user can rely more on the vocal or graphical user interface depending on his current needs.


A user requirement on the backend side we are working on is the essential content that has to be consistently provided by the Service Provider. To adapt our developments as close as possible to the real market demands we are analyzing reiteratively the concerning professional business environment. For this purpose we reviewed the commonly used data sources in this niche. These are mainly the so-called Emergency Response Cards (ERICards) and the (Material) Safety Data Sheets (MSDS/SDS). Furthermore we analyzed the related property tree and standard applications. Of course we also had to inquire fire brigades directly (for details please see above mentioned deliverables).

As data source/server in WP12.4 we set up a backend machine with SAP R/3 including the related SAP module EHS (see D12.1.1.4.1). In this process we had to translate required phrases, create a suitable SAP EHS property tree, a suitable XML report template, customizing of SAP R/3 and the like to set up a suitable database for the essential ICE content. WP12 also took care of setting up all external systems required like the IBM WebSphere(R) Studio Device Developer (for OSGI environment).

Next important topic was the setup of the multilingualism of the system. To achieve sustained success it has shown that it is essential that the user can operate the system in the language he is used to. Although the BASF fire brigade runs the international control unit of various fire brigade networks it is evident to be able to switch in between both languages English and German.

Work package task WPT9.1.2 “Define Core Business Logic“ transformed the analyzed user requirements of WPT9.1.1 into the core ICE business logic. That was the basis for the implementation in the related work package tasks of WP12.4. This included the identification of the required properties, the best way of identifying hazardous substances and requested properties etc. All that could be best described as “ergonomically designing” our application.

Complementarily we analyzed the actual user dialogs to evaluate the required functionalities. One of these functionalities we derived as essential is the “quick print” of necessary documents as the Safety Data Sheets or the so-called ERICards. That is close to the current way of working and increases the initial acceptance of the application. Getting more familiar with the further ICE features we bring the user also closer to the potentials of using his voice as suitable communication channel. To achieve this we enabled all in- and output parallel also via voice.

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More detailed information could be found in the concerning deliverables (D12.4.1.1) Documentation ICE pilot "User Communication" and (D12.4.1.2) Documentation ICE pilot "Functionalities".

Although these deliverables are part of WP9/12.4 are they also results for our WP9.1 activities. Indeed WP9.1 delivers the requirements that have to be implemented within WP12.4.

Work package task WPT9.1.3 "Report difficulties and enhancements" were executed using different communication channels. It has shown that the best possible way to exchange related information between pilot implementers and technology partners is using suitable tracking tools accessible via Internet. This is an explicit WP9 and WP12 demand and will be realized by the SAFIR management now. Besides that we communicate difficulties and enhancements mainly in bilateral contact (pilot implementer to technology partner) on all possible ways as telephone, mail or using Skype and of course in the concerning deliverables, meetings and conference calls.

Work package task WPT9.1.4 "Implement the modifications as provided by WP11 and WP12" are content of the WP12.4 deliverables (D12.4.1.1) Documentation ICE pilot "User Communication" and (D12.4.1.2) Documentation ICE pilot "Functionalities". Both give a detailed insight into the features we implemented during the last 6 months.

5. OPEN ISSUES AND STRATEGY TO RESOLVE THEM

WP9 is intended to enhance the related SAFIR SDK. Wp9.1 does so in using and improving Viva4OSGI. The communication process between SAFIR technology partners and the "users of the SAFIR SDK" as the pilot preparing SAFIR partners could also be improved to be more effective and target-oriented. For this reason we should set up a suitable issue tracker (bug tracking tool). First tests using the system "Mantis" were very successful and should be continued by the SAFIR management now. This would institutionalize not only the tracking of bugs, but also the communication of new requirements. Furthermore it would help to trace status of issues reported for all parties including the European Commission. This would also visualize the contribution of the pilot preparing partners (SAFIR SDK users).

6. NEXT STEPS

6.1 Actions by Partners


JPass already initiated complementary contacts to further potential ICE users. These contacts will be extended. The related cooperation regarding adapting ICE unto further user requirements has to be intensified. The same is true for the concerning Dutch contacts Geodan introduced (cross-border activities).

The collaboration from both EH&S and SAFIR for cartographic usage (JRC) has to be coordinated. The pilots have to be improved in direct contact with different potential end users. Here is a set of a few very interesting additional parties already initiated by JPass. Difficulties and enhancements have to be reported using a suitable tracking tool. Therefore a suitable tracking tool has to be set up, available for all SAFIR partners. That will help also to report modifications and corrections as provided by WP11 and WP12. This is an iterative process between the different SAFIR partners up to the final pilot.

Fire and Civil protection pilots are based on the client server architecture (OSGI) on mobile devices (mini Tablet PC like). It is considered to exchange data via XML files (MSDS subset) with the PHS-Info pilot (WP9.2 with focus on the Public Health and Safety, like Police and Health Care sector).

6.2 Planning Impacts

Continuing as planned.

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7. CONCLUSION

Work package WP9.1 related activities in the project period M19 to M24 concerning the special user pilot “Information Center EHS” (ICE) are covered in this report.

WP9.1 takes care to further develop application ICE regarding the real user needs. Here you can find the concerning WP9.1 activities and related WP12 developments shortly summarized. The development focus was lying on multilingualism and the vocal as well as the graphical user – ICE communication as required by the pilot users among others. In the first project phase we developed mainly the technology itself (system architecture and a suitable voice-activated access to the concerning contents on the Service Provider side). The user acceptance has now to be increased for example by an improved graphical user interface. A further effort was to enhance the dialogs (inclusive descriptions) between system and user (user dialog, help functions, examples and so on). Later project steps will then take care of the system mobility (e.g. wireless communication).

Please check the preceding WP4 deliverables for more detailed specifications. There you can find in-depth descriptions of the preliminary pilot ICE. Main user is still the special professional user fire brigade. This report for the enhanced pilot ICE now delivered an insight into the current development steps.

SAFIR special user pilot “Information Center EHS” aims to bring new requirements and consequently helps to improve the overall jointly SAFIR SDK. It does this by applying the SDK, determining its usability and requiring new or enhanced functionalities, finally to emerge and improve the SAFIR SDK.