



## DELIVERABLE

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### D3.1 - Development environment and testing machines report

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## **1. INTRODUCTION**

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### **1.1 Scope and objectives of the deliverable**

Each partner involved in the developments of components and/or applications identified the development environment and testing machines to feed their development requirements. Different development environments and tools and programming languages had been analysed, the pros and cons of each one has been defined. The idea was to achieve a common development environment that meets the requirements of the modules by the partners involved. Similarly, we will set the test equipment required for each module.

### **1.2 Structure of the deliverable**

After the general introduction of the Ancona meeting we introduce the reasoning behind the decisions (1) for development environments and (2) testing machines. At the end some more considerations had been introduced.

### **1.3 Introduction**

In Ancona when the team had the meeting, we talked thru ourselves on the technology background and the goals we've to reach with this project and all decisions are made based on the input from other teams. One of the decision points was to face some challenges, the other was to make the prototype future proof, so develop this project with "tomorrow's technology".

Since the KIBU team has a strong Microsoft background and the others involved in the development told them that they like to work more with Microsoft technologies, we looked at the business problems what should ElderHop need to solve and selected the following technologies detailed below.



## 2. DEVELOPMENT ENVIRONMENT

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Since we're talking about Microsoft based solution, it was straightforward that we need to select a Microsoft tool which fulfils our needs.

Microsoft just released (2012 September) the Microsoft Visual Studio 2012 product, which is the best choice we can have.

This is Microsoft's flagship development tool, which is covering the full development lifecycle with its built-in tools.

It has tools for designing the system components with its architecture tools. This includes high level birds eye view component diagrams as well as low level class and method level diagrams.

With this tool we can develop Cloud components for the server side, the necessary administrative website and the client application(s) too.

By leveraging Visual Studio 2012 capabilities we can even have continuous integration support, which can help us to improve code quality for the whole solution.

For cloud development we chose Microsoft cloud technology, Windows Azure, which has built-in support in Visual Studio 2012.

The component interface will be exposed from the cloud via ASP.Net 4.5 Websites, utilizing WebApi technology.

The backend storage will be provided by an EventStore and MongoDB running in virtual machine instances in Windows Azure.

The primary client application will be developed for the WindowsPhone 8 platform, which is currently not available, but to be released later in 2012 – based on the available information. We chose this platform because this platform provides all the capabilities we need and provides the ease of development. The learning curve is pretty flat and KIBU team already has experience in this area.

The developer support for the platform is outstanding comparing to other available platforms. The openness of the platform is sufficient to the project because of the available set of APIs – for example compared to iOS which is single vendor and this could be a potential risk regarding the project implementation. It is true that Android is open, but since the Android based devices are offered by multiple manufacturers without support and platform roadmap, which did not fit our needs. Another thing is that the Android platform is changing so rapidly and hectically with no precise roadmap, it carries a tremendous amount of risk for the development of the project.

If the time and available resources are allowing us, we will develop a secondary client application targeting Windows 8 tablets. The Demo for the AAL forum was developed for such device.

Microsoft lifecycle policy offers a stable support background for the future market implementation of the system.

The development language of the whole solution will be C# and for the administrative website the development will be based on HTML5, CSS3 and JavaScript.

The design tool for the client user interface will be Microsoft Blend.

Regarding the TV experience Samsung SmartTV platform will be utilized targeting the newest available 2012 TV models with a HTML based application running on the TV itself without the need of any additional hardware like set-topboxes.

### 3. TESTING MACHINES

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Testing machines Development and testing machines must be able to run Windows 8. Windows Phone 8 devices are a must to test the client application. The developer computers must support Hyper-V in order to run the Windows Phone 8 developer emulator.

Windows Phone 8 devices are currently not available for purchase; these will be available in Q4 2012.

The secondary client application is designed to run on the new Windows 8 tables. (x86/x64 and ARM based devices as well)

The test devices must be able to access the infrastructure located in Windows Azure via Wi-Fi or 3G or LTE.

At the moment, Nokia Lumia 810, 820, 920 are the potential devices for testing.

Regarding the SmartTV platform, only 2012 model year Samsung SmartTV 7xxx, 8xxx, 9xxx series are considered with built-in ethernet connection and smarthub functionality, compatible with the latest Samsung SmartTV SDKs.

#### **4. TECHNOLOGY CHOICES AND CONSIDERATION**

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Microsoft Windows Phone 8 is the primary choice for mobile client applications. Windows Phone 8 is still a relatively new platform but it has all the requirements Elderhop needs. The main reasons behind choosing Windows Phone 8 as a primary platform is the general support of NFC – which plays a very important role in the Elderhop project – and the consistent, stable platform that Microsoft provides. Apple's IOS platform and Google's Android devices are also being considered, but the iPhone at this moment lacks NFC support, while Google's platform is quite fragmented and lacks consistency.

Windows 8 provides a great opportunity for ElderHop. There are nearly 400 millions of PCs out there, many of them capable of running Windows 8.

Microsoft also offers a great opportunity to create a one app runs everywhere user experience with Windows 8 and Windows Phone 8.