# D2.3 - User Validation - Version A

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<th>FP7-ICT-2013-7 - 610691</th>
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<tr>
<td><strong>Project acronym</strong></td>
<td>BRIDGET</td>
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<tr>
<td><strong>Leader of this document</strong></td>
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**Abstract**

This document describes the methodology followed to evaluate BRIDGET tools at the end of the first cycle of work. At first the two main usage domains are contextualised in terms of functionalities tested in the trials, then the list of requirements that have been put under test and the exercises proposed to users to validate the Professional Authoring Tool and the BRIDGET Player Application are presented. The description of how different trial sessions have been carried out with a brief high level analysis of the results for each session is also reported together with a short list of design guidelines for the next developing cycle.

**Keywords**

Validation, Methodology, Feedback, Requirements, Exercises, design guidelines
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<td>0.1</td>
<td>2015-10-12</td>
<td>Fulvio Negro – First draft</td>
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<tr>
<td>0.4</td>
<td>2015-10-15</td>
<td>Requirements and UML diagrams revised</td>
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<td>0.5</td>
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<td>Feedback elements and Heuristic evaluation added</td>
</tr>
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<td>2015-11-09</td>
<td>AT and Focus group feedback elements added</td>
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<td>0.7</td>
<td>2015-11-10</td>
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<td>2015-11-11</td>
<td>Reviews managed and sent to coordinator for delivery to Commission.</td>
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1 Executive summary

This document describes the methodology followed to evaluate BRIDGET tools at the end of the first cycle of work. At first the two main usage domains are contextualised in terms of functionalities tested in the trials, then the list of requirements that have been put under test and the exercises proposed to users to validate the Professional Authoring Tool and the BRIDGET Player Application are presented. The description of how different trial sessions have been carried out with a brief high level analysis of the results for each session is also reported together with a short list of design guidelines for the next developing cycle.
2 Introduction

This document is Version A of the deliverable produced by the BRIDGET project to describe methodologies adopted to test the developed tools and to present feedback elements and factors derived from different trial sessions.

The document is organised as follows: Section 3 presents the trial methodology containing the list of trialled requirements and exercises proposed during trials sessions to test the developed tools; Section 4 describes feedback elements and factors for each trial modality.

3 Trial methodology

The workflow adopted for user trials has as a starting point a deep system analysis that brought to highlight the Proof-of-Concept Functionalities at M3 of the project [1], here recalled and further developed in Section 3.1.1 from the point of view of user trials, and subsequent requirements [2].

To validate results of the first cycle of work, only a subset of these functionalities have been considered (see Section 3.1.2), and a further analysis led to the identification of several user requirements and requirements of Applications (see Section 3.2) to be put under test during the first trials of the project, both in the production domain and in the end user domain.

Once the above mentioned requirements have been selected, a couple of practical exercises reflecting those requirements have been identified to test the developed systems (see Section 3.3) against them. The production domain exercise (Section 3.3.1) has been proposed to professional users to put under test the Professional Authoring Tool, while the end user domain exercise (Section 3.3.2) has been proposed to test the BRIDGET Player Application during a couple of focus groups organised with real end users.

Both professional users and end users involved in the trials gave substantive feedback about the experience they had with the tools by means of questionnaires and face to face interviews.

All the collected feedback has been analysed by the consortium in order to highlight eventual deficiencies of the provided tools and decide on how to proceed with further developments of the tools (see Section 4). The detailed analysis of feedback data is presented in [3].

3.1 Proof-of-Concept Functionalities

In the first part of this Section a high level functional breakdown of the scenarios described in [1] and the overall activity flows on the production and end user domain are presented. These two domains are the contexts in which the validation took place.

The second part of this Section shows the subset of the Proof-of-concept functionalities taken into account to validate results of the first cycle of work.

3.1.1 Use Cases Breakdown Analysis

Figure 1 and Figure 2 respectively report the UML use case representation of the two domains of usage of BRIDGET technologies: the production domain and the end user domain. These descriptions have been derived by analysing in further detail the scenarios proposed in [4] and putting those high-level user experiences in context of a possible back-end (authoring and production) and front-end (user experience) workflow. This activity allowed to derive a consistent set of high-level functionalities which have to be realised and supported by the technologies developed or integrated by the project and to define trials exercises (see Section 3.3).

3.1.1.1 Production Domain Use Case

In the production domain we identified the following main functional areas, in Figure 1 associated to different colours:

- Content repository area, i.e. the functionalities connected to the search and retrieval of content and metadata
- Content analysis and 3D reconstruction area, i.e. the functionalities provided by the content analysis and 3D reconstruction subsystems
- Editorial staff area, i.e. the functionalities available to the editorial staff of the broadcaster
- Content provider area, i.e. the functionalities provided by the content providers
- Indexing and search area, i.e. the functionalities exposed by the visual search-based and metadata-based indexes
Figure 1 - UML use case diagram for the production domain
Figure 2 - UML use case diagram for the end user domain
3.1.1.2 End user Domain Use Case

In the end user domain we identified the following main functional areas, in Figure 2 associated to different colours:

- End user area, i.e. the functionalities available for direct usage to the end user
- Bridget application area, i.e. the functionalities provided by the second screen application used to consume bridgets
- Bridget repository area, i.e. the functionalities provided by the broadcaster back-end to access and retrieve information related to bridgets
- Content repository area (in common with the production domain), i.e. the functionalities connected to the search and retrieval of content and metadata
- Content provider area, (in common with the production domain), i.e. the functionalities provided by the content providers
- TV set area, i.e. the functionalities provided by the main screen device
- Broadcast service area, i.e. the functionalities provided by the broadcasting service

3.1.2 Trials Exercises Breakdown Analysis

Figure 3 and Figure 4 show the same UML diagrams presented in 3.1.1, but in this case the functionalities that were not considered in the first cycle of work (thus not taken into account to identify proper trials exercises) have been highlighted by a red rimmed greyed oval.
Figure 3 - UML use case diagram for the production domain – trials context.
Figure 4 - UML use case diagram for the end user domain – trials context.
3.2 Trialled requirements

This section provides the lists of detailed requirements foreseen for the BRIDGET tools (i.e. the Professional Authoring Tool and the BRIDGET Player Application) that have been developed during the first cycle of the Project (Version A) and trialled during the first user trials. For further information refer to [2].

3.2.1 User requirements

Notice: in this section the word “user” indicates the appropriate type of BRIDGET user for each scenario: bridget editor or end user playing bridgets and/or destination content.

3.2.1.1 Bridget Creation

This section collects requirements on how users create bridgets.

*Table 1 - Bridget creation user requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBC1</td>
<td>Content link</td>
<td>The user shall be able to link destination content to a programme through the creation of a bridget.</td>
</tr>
<tr>
<td>UBC2</td>
<td>Stored content</td>
<td>The user shall be able to create bridgets for stored programmes.</td>
</tr>
<tr>
<td>UBC4</td>
<td>Bridget association – time-aligned</td>
<td>The user shall be able to associate one or more bridgets to a defined interval in the timeline of the programme (time-aligned bridget).</td>
</tr>
<tr>
<td>UBC5</td>
<td>Bridget association – global</td>
<td>The user shall be able to associate one or more bridgets to the entire duration of the programme (global bridget).</td>
</tr>
<tr>
<td>UBC6</td>
<td>Bridget made global</td>
<td>The user shall be able to transform media time-aligned bridgets into global bridgets.</td>
</tr>
<tr>
<td>UBC8</td>
<td>Time-aligned bridget points candidates</td>
<td>The user shall be able to retrieve a list of manually and automatically generated candidate media time/space points or segments for bridget insertion.</td>
</tr>
<tr>
<td>UBC9</td>
<td>Destination content candidates</td>
<td>The user shall be able to retrieve a list of manually and automatically generated candidate destination content for a programme segment.</td>
</tr>
<tr>
<td>UBC11</td>
<td>Bridget information creation</td>
<td>The user shall be able to include and modify a set of information in a bridget, following a defined bridget representation structure.</td>
</tr>
</tbody>
</table>

3.2.1.2 Bridget Access

This section collects requirements on how users access bridgets.

*Table 2 - Bridget access user requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBA1</td>
<td>Devices for bridget access</td>
<td>The user shall be able to access bridgets and</td>
</tr>
</tbody>
</table>
### 3.2.1.3 Bridget Search

This section collects requirements on how users search bridgets and related content.

*Table 3 - Bridget search user requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBS1</td>
<td>Bridget Search</td>
<td>The user shall be able to search and retrieve bridgets using metadata.</td>
</tr>
<tr>
<td>UBS2</td>
<td>Content Search – production</td>
<td>The user shall be able to search and retrieve media content similar or related to a segment of the programme.</td>
</tr>
<tr>
<td>UBS5</td>
<td>Content search – metadata</td>
<td>The user shall be able to search for similar or related content using metadata.</td>
</tr>
<tr>
<td>UBS6</td>
<td>Content search – visual queries</td>
<td>The user shall be able to search for similar content through visual queries.</td>
</tr>
</tbody>
</table>

### 3.2.1.4 Bridget Presentation

This section includes requirements on how bridgets are presented to users for navigation and selection.

*Table 4 - Bridget presentation user requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBP1</td>
<td>Presentation of in-scope time-aligned bridgets</td>
<td>The user shall be able to view a presentation of the bridgets according to their temporal scope on the media time interval of the programme.</td>
</tr>
<tr>
<td>UBP2</td>
<td>Presentation of out-of-scope time-related bridgets</td>
<td>The user may be able to view a presentation of associated content.</td>
</tr>
</tbody>
</table>
### 3.2.1.5 Bridget Consumption

This section includes requirements on how user consume bridgets.

*Table 5 - Bridget consumption user requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBU1</td>
<td>Bridget consumption</td>
<td>The user shall be able to consume available bridgets (i.e. bridget presented to the user) and corresponding destination content on the second screen.</td>
</tr>
<tr>
<td>UBU2</td>
<td>Global bridget consumption</td>
<td>The user shall be able to consume a global bridget and corresponding destination content at any time during the associated programme.</td>
</tr>
<tr>
<td>UBU3</td>
<td>Independent consumption</td>
<td>The user shall be able consume bridgets and corresponding destination content without interrupting the programme on the main screen.</td>
</tr>
</tbody>
</table>

### 3.2.2 Requirements of Applications

This section provides the detailed functionalities required by the BRIDGET applications that have been developed during the first cycle of the Project (Version A): the Professional Authoring Tool and the Player. The end-user level authoring tool will not be included in this version of the applications.

#### 3.2.2.1 Professional Authoring Tool

*Table 6 - Professional Authoring Tool functional requirements*

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCM1</td>
<td>Content ingestion</td>
<td>The content management system shall allow media content ingestion and storage in content repositories.</td>
</tr>
<tr>
<td>FCM2</td>
<td>Content types</td>
<td>The content management system shall support the following media types: audiovisual content.</td>
</tr>
<tr>
<td>FCM3</td>
<td>Content metadata</td>
<td>The content management system shall allow storage of</td>
</tr>
<tr>
<td>Req. ID</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FCM4</td>
<td>Content removal</td>
<td>The content management system shall allow deletion of content and related metadata and annotations from a content repository.</td>
</tr>
<tr>
<td>FCM7</td>
<td>Indexed Content</td>
<td>The content repository shall maintain a list of indexed content.</td>
</tr>
<tr>
<td>FCM8</td>
<td>Bridget ingestion</td>
<td>The content management system shall allow bridget ingestion and storage in bridget repositories.</td>
</tr>
<tr>
<td>FSY7</td>
<td>Synchronisation information production</td>
<td>The synchronisation tool shall be able to create synchronisation information from a segment of a programme.</td>
</tr>
<tr>
<td>FCA4</td>
<td>Bridget delivery</td>
<td>The content access system shall support access to bridgets delivered through HTTP.</td>
</tr>
<tr>
<td>FMA1</td>
<td>Multiple content types</td>
<td>The media analysis tools shall be able to process audiovisual content comprising images and/or video and/or audio.</td>
</tr>
<tr>
<td>FMA8</td>
<td>Real-time content description extraction</td>
<td>The media analysis tools shall be able to generate audiovisual content descriptions in real time or near-real-time.</td>
</tr>
<tr>
<td>FMA11</td>
<td>Low-level structural segmentation</td>
<td>The media structure analysis tools shall be able to provide a shot-level temporal segmentation and keyframe representation of audiovisual content.</td>
</tr>
<tr>
<td>FST1</td>
<td>Visual search in image library</td>
<td>The visual search engine shall support visual search in a pre-indexed image library based on a query image.</td>
</tr>
<tr>
<td>FST7</td>
<td>Ranking of the search results based on matching confidence</td>
<td>The visual search engine shall support ranking of the search results based on match confidence.</td>
</tr>
<tr>
<td>FST15</td>
<td>Integration with content-based search</td>
<td>The visual search and indexing engine shall execute queries based on content input by the user.</td>
</tr>
<tr>
<td>FAP1</td>
<td>Bridget presentation</td>
<td>The presentation system shall present time-aligned and global bridgets associated with a programme using the information provided by the synchronisation system.</td>
</tr>
<tr>
<td>FAP2</td>
<td>Multiple bridgets presentation</td>
<td>The presentation system shall be able to present more than one bridget at the same time.</td>
</tr>
<tr>
<td>FAP5</td>
<td>Groups of bridgets</td>
<td>The presentation system shall provide a way to interact with a group of bridgets allowing to collapse or expand the related items.</td>
</tr>
<tr>
<td>FAP7</td>
<td>Content presentation</td>
<td>The presentation system shall be able to decode and render destination content linked by a bridget.</td>
</tr>
<tr>
<td>FAP8</td>
<td>Programme presentation and navigation</td>
<td>The presentation system shall provide at least one way to navigate the source programme timeline using</td>
</tr>
</tbody>
</table>
3.2.2.2 Player

Table 7 - Player functional requirements

<table>
<thead>
<tr>
<th>Req. ID</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSY1</td>
<td>Synchronisation presentation delay</td>
<td>The synchronisation tool shall allow bridget presentation, synchronised to a point in the media timeline of a programme, with a maximum delay of 5 s.</td>
</tr>
<tr>
<td>FSY3</td>
<td>Bridget identification</td>
<td>The synchronisation tool shall be able to identify the bridgets to retrieve and present at specific points in the media timeline of a programme.</td>
</tr>
<tr>
<td>FSY4</td>
<td>Programme media time identification</td>
<td>The synchronisation tool shall be able to retrieve the media time from the main programme at specific points in time.</td>
</tr>
<tr>
<td>FSY5</td>
<td>Independence from main screen interactions</td>
<td>The synchronisation tool shall be able to synchronise the presentation of a bridget to a programme without any interaction with the main screen (e.g. using audio and/or video fingerprinting mechanisms).</td>
</tr>
<tr>
<td>FCA1</td>
<td>Content delivery</td>
<td>The content access system shall support access to content delivered through HTTP.</td>
</tr>
<tr>
<td>FCA4</td>
<td>Bridget delivery</td>
<td>The content access system shall support access to bridgets delivered through HTTP.</td>
</tr>
<tr>
<td>FAP1</td>
<td>Bridget presentation</td>
<td>The presentation system shall present time-aligned and global bridgets associated to a programme using the information provided by the synchronisation system.</td>
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<tr>
<td>FAP2</td>
<td>Multiple bridgets presentation</td>
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</tr>
<tr>
<td>FAP5</td>
<td>Groups of bridgets</td>
<td>The presentation system shall provide a way to interact with a group of bridgets allowing collapsing or expanding the related items.</td>
</tr>
<tr>
<td>FAP7</td>
<td>Content presentation</td>
<td>The presentation system shall be able to decode and render destination content linked by a bridget.</td>
</tr>
</tbody>
</table>

3.3 User Trials Exercises

For the first validation phase of the BRIDGET technologies and tools two exercises have been defined to drive involved users both in experience of the BRIDGET Professional Authoring Tool developed for the production domain and the end user’s BRIDGET Player Application developed for the end user domain.
In the following sub-sections a textual description of each exercise is presented. Where suitable, in brackets, the correspondent UML use case diagram functionalities (referred in Figure 1 and Figure 2) involved in each specific step of the exercise are also mentioned.

In the following example the text in bold identifies an action in the exercise workflow, while text in italic refers to use case functionalities taken from Figure 1 involved in the action:

- **The user loads a content from the library** *(Select source material, Select pre-existent material, Provide content)*

### 3.3.1 Production Domain

The exercise proposed to test the Professional Authoring Tool is:

- The BRIDGET Professional Authoring Tool is running, the home page is displayed
- The user accesses the Programmes Repository and adds a new Source Programme *(Add new content, Ingest new content)*
- After the content upload phase the shot detector and the CDVS extractor tools run automatically one after the other *(Invoke content analysis, Run content analysis, Provide content analyses results)*
- The user loads a content from the library *(Select source material, Select pre-existent material, Provide content)*
- Using the following workflow the user can add new time-aligned bridgets to different shots or global bridgets to the whole programme
  - The user can navigate the video and have an easy access to segments (shots) for augmentation *(Provide content analyses results, Provide bridget points, Select & filter bridget points)*
  - The user selects a shot *(Select specific segments)*
  - The user starts the new bridget’s creation workflow for the selected shot
  - The user adds info to the new bridget metadata structure *(Ingest new metadata)*
  - The user adds an icon from the local disk to represent the new bridget *(Add new content, Ingest new content, Ingest new metadata)*
  - The user searches for content similar to those pertaining to the selected shot using metadata *(Search by content)*
  - The user selects several content from the list of retrieved destination contents and adds them to the new bridget *(Provide content, Provide metadata, Link content through bridgets)*
  - The user edits Bridget Layout and saves his choices *(Consolidation and rendering)*
  - The user stores the newly created bridget *(Store consolidated bridget)*
- Using the following workflow the user is able to reuse existing bridgets in the same source programme
  - The user selects a shot *(Select specific segments)*
  - The user searches for a specific bridget among the stored ones using bridget’s metadata and selects one bridget from the returned list of bridgets *(Provide metadata, Load metadata about bridget points, Select & filter bridget points)*
  - The user modifies some metadata and destination content of the reused bridget *(Link content through bridgets, Consolidation and Rendering)*
  - The user runs visual search to add further pictures to the reused bridget *(Search by content, Provide visual search results, Metadata-based indexing, Content-based indexing, Provide content updates)*
The user confirms the selection for further pictures to be added to the reused bridget (Link content through bridget)

The user stores the modified reused bridget (Store consolidated bridget)

- Using the following workflow the user is able to have a rough preview of the bridged programme and apply possible modifications
  - The user consolidates the bridged programme, i.e. the output MP4 is created (Consolidation and rendering)
  - The user sees a preview of the bridged programme in the AT environment (Consolidation and Rendering)
  - The user decides to modify a bridget of the programme (Link content through bridgets)
  - The user selects the bridget and makes the desired modifications, e.g. modifies a time-aligned bridget into a global bridget, changes some destination content (Provide metadata, Load metadata about bridget points, Select & filter bridget points, Link content through bridgets)
  - The user stores the modified bridget (Store consolidated bridget)
  - The user re-consolidates the modified bridged programme (Consolidation and rendering)
  - The user sees a preview of the modified bridged programme in the AT environment (Consolidation and Rendering)

### 3.3.2 End user Domain

The exercise proposed to test the BRIDGET Player Application is:

- The user selects and watches a recorded TV Programme (Watch TV Programme, Read and display recorded Programme)
- The BRIDGET Application recognises the Programme. The objective is to start synchronisation. This is done through the Synchroniser (Read synchronisation information, Provide synchronisation information)
- The BRIDGET Application downloads the associated content (Read bridget content, Provide bridget content, Provide metadata, Read configuration metadata)
- The BRIDGET Application records the audio track, extracts audio signatures and matches them with the ones that are related to the associated content available locally or remotely. The objective is to keep synchronisation to ensure a timely presentation of bridget information and related destination content. This is done through the Synchroniser (Read synchronisation information, Provide synchronisation information)
- The Bridget Player displays notifications whenever a match is confirmed, thus presenting bridgets. This is done through the Synchroniser (Display video with bridgets, Present bridget information, Read bridget information, Provide bridget information, Provide global bridget, Provide media-time aligned bridgets)
- The user interacts with the bridget content (i.e. the bridgets and presentation information) (Select bridgets, Filter bridget from list, Select object from video, Read object information)
- The user consumes some destination content (Use bridget content, Present bridget content, Read bridget content)
- Once the programme finishes, the user is presented with the list of all the programme’s bridgets so that he can enjoy any missed destination content of interest (Provide bridget information, Provide global bridget, Provide media-time aligned bridgets, Provide bridget content, Provide metadata, Select bridgets, Filter bridget from list, Use bridget content, Present bridget content, Present bridget information, Read bridgets information, Read bridget content)
4 Feedback elements and factors

To test the Professional Authoring Tool a focus group made up of different professionals in media production has been selected, spanning in a number of different roles, all relevant to the objectives of the project. The approach to select these testers is based on an analysis of the professional skills needed to realise the final product (i.e., the second screen experience of the end-user environment) in the tested cases.

Professionals who tested the Professional Authoring Tool belonged to the following roles:

- Executive Producers
- Programme directors
- Assistant programme directors
- Assistant to programmes
- Graphic designers

Feedback collected during the focus group described above are summarised in Section 4.1 of this deliverable and deeply reported and analysed in [3].

As to the BRIDGET Player Application a crucial step was first to understand the effectiveness of the mobile application provided to final end-users.

To accomplish this task, the mobile application has been preliminarily tested by a team of experts, looking for major issues requiring modifications before being submitted to groups’ participants.

The choice of which participant fitted better with such a new service and mobile application has been driven by evidence on the different audiences that could have been more interested in each of the two scenarios chosen for each session:

- Enhanced News and Crowd Journalism. For this case a group of retired workers (approximately aged 65) was selected
- Edutainment. For this case a group of young parents (approximately aged 35) was selected

Both scenarios are detailed in [4].

Retired workers with good ability of understanding and using new technologies seemed to be perfect to test the first scenario, with its significant amount of recently annotated content; in the same way, young parents were the closest to the elective user profiles of the Edutainment scenario, i.e. their children.

Two different focus group sessions took place separately, one for each group of participants; after these, feedback have been collected by consortium experts via individual interviews, providing the final report collecting the trends and the final qualitative assessment of the participants.

An abstract of these feedback is presented in Section 4.2 of this deliverable and deeply reported and analysed in [3].

4.1 Authoring tool feedback analyses

For what concerns the Professional Authoring Tool trial, we can conclude that the functionality presented have been well received and considered generally well designed to fulfil the requirements of a hypothetical bridge creation workflow, although ameliorations would be requested in terms of content organisation, graphic layout and integration with existing enterprise services before thinking of an actual production phase. From the strategic perspective of utilisation of the tool in the context of a media company business process, although the idea of such a service has been acknowledged as valid, there is a dear indication that an accurate study on the impact in terms of resources and integration of personnel skills is to be carried out in the remaining timeframe of the project.

4.2 Player feedback analyses

4.2.1 Heuristic evaluation

The team of experts that tested the Player application in order to highlight deficiencies of the proposed solutions gave also positive feedback. Indeed, from the functional point of view, the application achieves
the task of well recognising the audio of the TV programme for a good synchronisation, minimizing failures. However, from the interaction point of view different issues have been raised and have been considered to be solved before the focus groups sessions; in particular, a shared framework for “bridgeted” programmes was missing as well as clear indications allowing users to understand what they could do.

Navigation issues were also identified together with the indication for the necessity to build specific and unified behaviours between programmes and to use more user-friendly feedback.

4.2.2 Focus Groups

Once the BRIDGET Player Application has been improved following outputs of the heuristic evaluation phase, a couple of focus group sessions have been organised, in order to verify:

- how much the bridget concept is perceived as useful, pleasant and could satisfy a real scenario of an everyday life use
- the efficiency of the solution, in order to highlight which aspects of the prototype are easy to use and intuitive and which are not completely clear for a good user experience
- how the application is perceived as innovative and which suggestions could better meet the users expectations

During both focus group sessions main characteristics of the bridget concept have been presented and all the application functionalities have been analysed in detail from the real user's point of view in order to get feedback and suggestions on the “ideal” BRIDGET Player Application.

To better evaluate the different solutions proposed by the project so far, two types of target groups have been involved, the first focus group was carried out with parents of teenagers, and focussed on the Gulp Girl content, the second one with people aged over 60, on the TG1 and Porta a Porta content. Refer to [5] for an extended description of these three cases.

4.2.2.1 Parents of teenagers target

Many interesting feedback and suggestions were the output of this focus group session.

The discussion about the behaviour and the interaction of the application led to the conclusion that the mechanism of audio-based recognition is considered a value, because of the innovative way of interaction but it is not displayed in an intuitive and clear manner. Participants would have desired different level of control on the activation of the application. The same lack of clarity has been identified in the bridget bubbles behaviour. Although if it was graphically appreciated, it was considered not completely clear and the group suggested to redefine its contextualization with the audio-based synchronisation mechanism.

Having different types of content as enrichments was appreciated, because these are graphically attractive and allow users to go deeply in the topic of the TV programme. Nevertheless in many cases displayed content has to be redefined both to avoid redundancy and for the way of interaction that sometimes is not completely clear. A lot of interest was noticed on the possible integration into the application of social pages that have definitely to be included, based on target and type of TV programme.

Users involved in this focus group highlighted the importance of such a service in particular for the edutainment scenario, seen as something inspiring fruitful discussions and allowing people to share their opinions, where it could be valuable to propose content on teaching how to do what a TV programme is talking about.

According to this focus group the tested prototype has good performances, the navigation is easy and the layout is nice.

In general, feedback were quite positive and a shared feeling was that the concept of this application could be extended to many types of TV programmes and to different target groups, in particular suggested scenarios were related to educational TV programmes, shows containing manual activities and programmes with a lot of interaction with users such as quiz and game shows.

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1 Here and hereafter with bridget we intend the notion developed by the project of a link from a source content to a destination content.
4.2.2.2 Retired workers target

The second focus group session involved this target on two different kind of programmes, namely TG1 and Porta a Porta.

The feedback about behaviour and interaction with the TG1 application revealed that the mechanism of audio-based recognition is considered a value because it allows to activate the application quickly, that is what users actually mostly care about. From the graphical point of view, news bars behaviour is appreciated and clear, because his metaphor is similar to the news caption but there are some superfluous elements (e.g., too many “back” icons).

Involved users said that having enhancing content in such a programme is useful, also having different type of content like images is an attractive point, but they also suggested to have more content and more readable (e.g., wider fonts and higher contrast), with customizable graphic elements.

As to the Porta a Porta programme, users feedback about behaviour and interaction was that the bridget bubbles behaviour is graphically appreciated, but it is not completely clear, especially the availability of the bubbles that needs to be more graphically diversified; indeed, during the session it was highlighted that the use of bridget bubbles on the right side of a content view was not clear for all participants.

Having different type of content was really appreciated, because these are graphically attractive and their presence allows the user to go deeply in the topic of the TV programme but in many cases content has to be redefined both to avoid redundancy and for the way of interaction that is not completely clear.

Users showed a lot of interest about social pages and external links that need to be included, based on the target and type of the TV programme.

4.3 Extracted design guidelines

Taking into account users’ feedback on both Professional Authoring Tool and BRIDGET Player Application side, deeply presented in [3] a short list of design guidelines has been extracted and is presented in the following subsections. The purpose of these guidelines is to provide a parallel input from the point of view of users, to the second cycle design of the applications.

4.3.1 Professional Authoring Tool

The following guidelines have been derived from the analysis of the Professional Authoring Tool feedback:

- Improve integration with enterprise content management systems, even if at an experimental stage
- Improve the organisation of content available to the authoring tool user
- Include the possibility to refer to segments of ingested programmes as potential destination content for other source programmes
- Include the possibility to reuse bridgets across programmes (e.g., episodes of a series)
- Improve the number and quality of layout options (layout templates) and add all relevant content parametrisation options (e.g., how/if to scale images)
- Define and implement a full layered model in the tool, by which users with different roles and authorisation level interact in a typical production workflow
- Include some level of rights clearance functionality for destination content
- Enlarge the content types available as destination content selectable and configurable from the authoring tool, e.g. text areas, interactive elements, links

4.3.2 BRIDGET Player Application

The following guidelines have been derived from the analysis of the BRIDGET Player Application feedback:

- Redesign the logic of the application start by:
  - Include the possibility for the user to configure the behaviour of the engagement depending on the specific programme/series
Consider to make it embedded in the main broadcaster mobile application and not as a separate and independent app

- Graphically redesign the different statuses of bridget content, based on the bubbles (or news bars) metaphor, in order to differentiate between content active in a specific moment of the TV programme but not yet visited and content already visited
- Regarding content not yet available, it is better not to display it to users or to show it with an advise that this content will be available soon
- Design an app with some educational content associated to a how-to-do-what TV programme, and test with end user (e.g. young target)
- Design a different architecture and navigation for news content, based on elderly people design requirements
- Try to explore different scenarios involving users in design sessions

5 Conclusions

This deliverable presents a high level description of the methodology used to design and execute the user validation of the technologies and tools developed by the project in the first cycle (Version A). The approach started from the breakdown analysis of the domain use cases (authoring and end user) and the selection of the functionalities to test, followed by the assessment of which requirements from the complete list (included in [2] ) have been actually subject of trial. The trial has been organised in form of guided exercises, which have been executed by appropriate panels of users. The results of the trials can be considered satisfactory and it was possible to derive a first set of guidelines for both usage domains for the development of the second cycle.

6 References


7 Acknowledgements

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Appendix A. Partners List

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