



Test Plan v2

Deliverable D3.4

MPAT File ID: d3_4.docx

Version: 1.2

Deliverable number: D3.4

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Work Package: WP3

Task: T3.2

Nature: R – Report / ~~O – Other~~

Dissemination: PU – Public / ~~CO – Confidential~~

Status: Living / ~~Final~~

Delivery date: 28.02.2017

Version and controls:

Version	Date	Reason for change	Editor
0	2017-02-20	Initial structure and content	M. Broadbent (ULANC)
1	2017-02-25	Included RBB content and comments	M. Broadbent (ULANC)
2	2017-02-28	Final content and editing completed	M. Broadbent (ULANC)
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Acknowledgement: The research leading to these results has received funding from the European Union's Horizon 2020 Programme (H2020-ICT-2015, call ICT-19-2015) under grant agreement n° 687921.

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Executive Summary

This document builds on a previous deliverable, namely D3.1. It expands on the initial plan for testing by increasing the scope and depth to include consideration for the *content consumers*. This group is a new addition to the testing process, but does not preclude continued testing conducted with the *content creators*.

As such, this document outlines two individual plans for testing each of these groups. This includes identification of both appropriate methods and participants. As before, this is intended to be harmonised between contributing partners to enable comparison of results in subsequent deliverables.

Since the submission of D3.1, the project has matured significantly, and now includes a working prototype, as well as base of knowledge surrounding capabilities and limitation. As such, this deliverable will draw on this to present a realistic and strong set of usability tests that will aid in creating a well-designed and considered solution as the projects draws to its conclusion.

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1 Introduction

The MPAT project outlines a rigorous and thorough process through which the platforms will be built. This incorporates designing, building and evaluating technical outputs in a continuing cycle. This ensures that the contributions are well-built, suitable, and relevant to the target communities.

Usability is a core requirement of the MPAT project. The tool should be easy to use by any number of people, each with different skillsets, and accessible to both novices and experts alike. This requirement drives the motivation behind our next phase of testing. Applications (especially those to be consumed on large-screen displays, often at a distance) need to be designed and used with some careful consideration to be truly useable by a wide audience base.

This document contains a plan for testing usability in the latter phase of development. This includes utilisation of the actual MPAT platform for authoring applications, as well as testing with applications that have been built through the platform.

The remainder of this document outlines the plan for two distinct sets of usability testing: one targeting the content creators and the other aimed at the content consumers. In comparison to the earlier test plan, this document incorporates more specifically those end-users (*consumers*).

2 Content Creator Tests

Building on previous work conducted in the first phase of the project, this aspect of the usability testing focuses on the *content creators* once more. Whereas in the initial testing, where creators were exposed to wireframe models and an example workflow, this phase takes on a more ‘hands-on’ approach. This is possible thanks to the maturity and development efforts placed in preparing the MPAT platform early in the project.

This testing is designed to expose potential users to the MPAT content creator interface. It is through this interface that applications are modelled and designed. Different layouts are chosen, as well as elements placed within different pages. The overall flow and structure of the application is also determined at this stage. Once this process is complete, the application is ready to be delivered to end-users (using whatever mechanism necessary – through a launcher, during a broadcast, etc.).

Given the purpose and intended audience of MPAT content creation, it is not just the usability of user interface that is to be tested; the documentation and guidance that accompanies this also needs to be suitably evaluated.

As such, the outcomes of this testing will feed back into and influence both the functionality and usability of MPAT, as well as the creation of a relevant and appropriate documentation to support its use in all intended scenarios; whether these be broadcasters, content creators or small-to-medium sized enterprises.

Given these intended outcomes, we first reiterate the process of identify a representative set of participants for this testing phase. We then define the necessary prerequisites that must be met before testing can take place. Then we outline in detail the test procedure, including the method and process. Finally, we conclude this section with some notes on the schedule for conducting this testing.

2.1 Identification of Participants

As stated in our previous work (D3.1), the main participants to be used in the *content creator* testing are those from the broadcast industry. To engage with this group again, we will leverage the situation at each participating partner.

For example, we will utilise members of the editorial team at RBB to participate in this phase of experimentation. As hypothesised originally, (and subsequently proven through the duration of the project), the interest in MPAT is driven by its ability to enable non-experts and non-technical members of staff to quickly and easily build applications. This includes spontaneous reactions to ongoing events. As such, this group is deemed vital for participation in this testing.

Similarly, we wanted to engage with those for whom TV-based application design is currently out of reach; whether this be due to monetary, infrastructure or regulation reasons. As such, we have identified several participants from the media, creative arts and advertising industries. These too have similar requirements in terms of ease of use, flexibility and technical background.

By engaging both groups, coupled with a consistent and common procedure, we aim to provide a broad and meaningful outcome to this second phase of testing.

2.2 Prerequisites

As this testing phase focuses on two main aspects, the following prerequisites should be in place before usability testing can begin:

- Supporting Documentation or MPAT Handbook
- Numerous working instances of MPAT (all running the same version of the toolkit)
- Experimental environment setup (including suitable computers, related equipment and software)
- Identification of facilitator team
- Identification and agreement of appropriate participants
- Knowledge of both functioning and non-functioning aspects of MPAT content-creator interface
- Familiar with issue resolution strategies and temporary 'fixes'
- Common set of tasks and procedures that participants must complete
- Common pre-interview questionnaire

2.3 Test Procedure

The testing methodology chosen for this phase of testing is a one-on-one interview with participants. This will take place whilst the participant is completing a list of pre-defined tasks using MPAT. The participant will be asked to *speak aloud* during this process. The facilitator will record the comments made by the participants, either through a transcribed textual record, or using audio recording equipment. Furthermore, additional software may also be utilised on the computers to be used by the participants to record their activity at each point in time.

It is imperative that the facilitator not only records normal and successful operation of MPAT, but that errors and issues are equally recorded. It is these that will be used to inform and improve MPAT as the project moves into the final phase. Similarly, it is a vital part of this experimentation that the facilitator intervenes if the participant gets stuck and cannot continue when working towards a task. This intervention however should not be immediate; the participant is expected to use all the material and documentation at their disposal to fix and self-correct the issue. However, if this is not possible, then the facilitator is able to aid remedy the problem. Therefore, it is particularly important that the facilitator has a detailed knowledge, not only of the functional bounds of MPAT, but also in the methods necessary to render these fixes accurately and quickly, as not to disturb the overall flow of testing.

The participants will begin the usability test with a short introduction from the facilitators, including documentation as to the purpose of the test. Their consent for participation and the usage of data generated through the conduction of the testing will also be attained.

Participants will then complete a short questionnaire, which contains general questions about the participants use of media and specific questions about their use of authoring and editing tools, i.e., for the creation of applications, websites, etc.

The participants will then be given any written (or otherwise) documentation to accompany the testing. They may also be given time to read through and digest this material prior to starting, if

they so wish. This documentation will remain with the participant throughout the duration of the testing, so that they may refer to it as they wish.

The participants will then be given a list of tasks. These are to be completed in order, and exercise a variety of features within MPAT. They also form an example workflow, representative of that which may be undertaken in day-to-day usage of the toolkit.

2.3.1 Task List

Although subject to change, an example list of tasks is as follows:

- Create an application model
- Choose a page model, and add a page
 - Add background colour
 - Add text
 - Add image
 - Add video
 - Add hotspots
 - Modify text style – font, size, bold, italic, etc.
 - Move image
 - Delete video
 - Modify one (or more) hotspots
- Add another page (repeat as many as necessary)
- Reorder pages
- Add links between pages
- Publish application

Further updates, modification or alteration will be included in the next deliverable (D3.5), once the experimentation is complete.

The participants will then work through each task, completing each sequentially. As mentioned previously, if the participant cannot proceed for whatever reason, the facilitator can intervene to resolve the issue. This must be clearly documented if it occurs.

Once every item on the task list is complete, the participants are thanked, and the experiment is over. The audio and textual records of the usability test are then safely and securely stored ready for analysis on completion of further testing.

2.4 Schedule – RBB

Particularly in the case of RBB, three phases of testing will be completed. The tests are to be carried out in such a way to iteratively incorporate results into both the MPAT system and the handbook. Any resulting improvements will be reflected in subsequent tests. Phases 1 & 2 testing will be conducted with external editors from MDR and Radio Bremen, whereas phase 3 testing will be conducted with RBB editors. Each phase is outlined below.

It is important to note that testing will also occur at the other participating institutions; however, this will only be a single un-phased occurrence in each case.

2.4.1 Phase 1

Phase 1 consists of a qualitative test carried out by 2-3 editors. The group will receive an introduction to the MPAT editorial system and, over a period of two weeks, editors will complete the questionnaire and undertake tasks to be carried out using the MPAT system on their own. All notes, commentary and queries made by testers should be entered in the relevant column provided in the handbook. Technical support will be provided by RBB during the testing period. The goal here is to optimise the scope and detail of the handbook.

Following testing, the outcomes will be evaluated. Where relevant, optimisation of handbook and system will be carried out or scheduled for integration.

2.4.2 Phase 2

In Phase 2 a further qualitative test will be carried out with another group of editors. Tests will include those from Phase 1, including any subsequent optimisation of the handbook, tasks and the MPAT editorial system, but without an introduction to the MPAT editor. The goal here is to optimise the usability of the MPAT editor with an optimized handbook.

Test outcomes will lead to further optimisation of the handbook and the editorial system. The goal of the tests is an optimisation of the handbook and editorial system, for use in the final Phase 3 RBB tests

2.4.3 Phase 3

Phase 3 consists of qualitative tests with RBB editors, preferably acquired from participants in the MPAT Kick-off Workshop, who contributed to the initial conception of MPAT. These tests include the earlier Phase 1 and 2 tests. The accompanying handbook and editor will include optimisation resulting from earlier testing outcomes.

2.4.4 Schedule

Given these three phases, the overall schedule is as follows:

	January				February				March					April			May			June						
Calendar week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
MPAT Evaluation / Content Creator Test																										
Develop test concept																										
Create questionnaire, HbbTV app task, MPAT manual																										
Phase 1: Introduction to MPAT - MDR journalists																										
Phase 1: Feedback / User Test MDR																										
Phase 1: Evaluate test results, update / create manual v2																										
Phase 2: Feedback / User Test Radio Bremen																										
Phase 2: Evaluate test results, update / create manual v3, write D3.5																										
Phase 3: Feedback / User Test rbb																										
Phase 3: Evaluate test results, create final version of MPAT manual																										

Figure 1. RBB Usability Test Schedule

3 Content Consumer

Content consumers are the group of end-users that will use the eventual output from MPAT usage. In the first phase of the project, and given that the toolkit hadn't yet achieved a level of maturity to enable applications to be built, this group was unconsidered.

However, developments and progress in MPAT has enabled a working prototype to be used. As mentioned previously, this has enabled the *content creators* to be tested using an actual running instance.

This has also enabled a similar advancement regarding *content consumer* testing, largely driven by the possibility and availability created through the toolkit itself. It is these applications, which have genuinely been created through MPAT, that will be used in this form of testing.

This is a tight correlation between these applications, and those developed in other parts of the project, specifically as part of the on-going pilots in WP6. It is these applications that will be exposed to end-users to collect feedback on usability. This provides an important level of realism to the tests, without the need to artificially create and/or manipulate the applications on show.

3.1 Identification of Participants

As with the *content creators*, it is important to consider a representative group of *content consumers* to be used in our usability tests. As identified in the previous test plan (D3.1), accurately engaging with a potential massive and wide group is a challenge, as anybody who consumes content on a TV enabled with appropriate technology, could be considered as a participant.

However, given the applications that we will be using in this test phase, which are tangible and real examples that at least have the potential to be aired on broadcast television (and in some cases, are), these are evidently themed and targeted at specific demographics. As such, these demographics also form the perfect set of participants for a usability test.

For example, one pilot application is the Band Camp Berlin application (see WP6 deliverables for more details). This aired on the KIKA channel, designed specifically for children and young adults. As such, the participants for a usability test concerning this application should focus on people within this age range.

3.2 Prerequisites

The following prerequisites should be in place before usability testing can begin:

- Functioning MPAT-based application (designed and built with MPAT) – may be different between tests, dependent on location, timing, localisation, etc.
- Experimental environment setup (including suitable devices and related equipment)
- Identification of facilitator team
- Identification and agreement of appropriate participants

- Knowledge of both functioning and non-functioning aspects of MPAT application to be used
- Familiar with issue resolution strategies and temporary 'fixes'
- Common set of tasks and procedures that participants must complete
- Common pre-interview questionnaire

3.3 Test Procedure

The testing procedure to be used in this case is almost identical to that outlined previously for the *content creator*: one-on-one interviews will be performed using representative and potential users of the target application.

Users will be introduced to the project and experiment. They will also be asked to complete a consent form. As TV applications are typically designed to offer natural and unaided use, there will be no documentation or assistance given at this stage (regarding how to use the application).

The participant will then be asked to complete a short survey to understand their background and experience in using televisions, and technology in general. This helps to form a baseline, and understand the level of competency exhibited by the participant. It also enables an aspect of comparison between contributing institutions, as the applications themselves may differ somewhat.

The participant will then be presented with a task list, detailing several actions that should be completed throughout the course of the test. The participant will be given time to read and digest these, and any clarifications will be given at this stage. These tasks will be unique to each application, but an example list is provided below. Further updates, including a full list of tasks used across all usability tests, will be presented in D3.5.

As the user works through the tasks, they are expected to speak aloud, verbalising their thought process, comments, feelings etc. As with the content creator's tests, they will also be aided if the application ceases to function correctly, an error occurs, or they cannot complete a task for whatever reason. However, it is equally important that the facilitator does not intervene until necessary.

3.3.1 Task List

This is an example task list, as to be used in the RBB consumer evaluation of the Band Camp Berlin application:

1. First Impression – Band Camp Berlin landing page

Interviewer: shows Task Bar with widget and app running.

- a. Describe what you see. *Speak out loud, even when you find something is not very impressive.*
- b. What kind of content did you expect? *Describe your first impressions.* Implicit goal – establish whether the user understands navigation with direction keys, and the 'OK with Enter button' concept.

Give the remote control to the tester.

- c. Tester uses the app on his/her own (5 mins).

Describe what you see and what the tester does/which buttons are pressed.

- d. Are your expectations fulfilled?
- e. Where did you have problems?

2. Evaluation of rbb's HbbTV app Band Camp Berlin with specific tasks

Task – speak your thoughts aloud, even if they are negative.

- a. *Navigation/Orientation: Classic vs. Slide Flow*
 - i. *Is the user able to return to the landing page/is the vertical navigation concept understandable?*
 - a. *Open Lissi's profile on the page named ,Die Band' (originally „Open Lissi's profile and then return to landing page“, question changed, as the app crashed upon video start)*
 - b. *On one of the ,Der Videodreh' sub-pages, find the interview with Lissi and return to the landing page (SlideFlow)*
 - c. *Find the 360° Video, move around the video and return to the landing page*
 - d. *question changed, as the app crashed upon video start)*
 - ii. *Did the tester need additional support to find out where he/she was in the app? (Tester's own self-evaluation)*

Could you work out what to do in the various tasks? Where would help have been useful?

- b. *Interactivity*
 - i. *Are the interactive elements recognisable?*
 - a) *Start the video on the landing page.*
 - ii. *Can the user navigate through individual elements?*
 - a) *Start the interview with Carlos Vargas (Question removed as the app function didn't work).*
 - b) *Play series 17.*
 - c) *Open the sub-page ,der Videodreh' and play the video on the page ,Soviel zu tun!“ Stop it at the beginning of series 17. (Question removed as the app function didn't work).*

Alternative task:

Open series 1, start the video, stop it and fast forward it.

- d) *Find the 360° Video, start it and move around in the video. (Question removed as the app function didn't work).*
- iii. *Are the interactive elements (video player, hotspots and 360°) easy to use?*

Could you work out what to do in the various tasks? Where would help have been useful?

3. Evaluation of the HbbTV app and questions from the testers

- a. *How good did you find the graphics? 1-6*
- b. *How comfortable were you with the app?*
- c. *Would you use the app yourself, privately?*

Open questions:

- d. *What possibilities do you see for HbbTV apps?*
- e. *Which pages were interesting, which not? Is there too much content?*
- f. *What do you think about the ,Karaoke' concept as a demonstration of the possibility of additional content?*
- g. *What did you like best about the app? What did you like least about it?*

Once every item on the task list is complete, some more generic and open questions will be posed to the participant. These are intended to capture additional feedback that is not within the scope of an active test. Once complete, the audio and textual records of the usability test are then safely and securely stored ready for analysis.

Glossary

CA	Consortium Agreement
CoA	Coordination Agreement
DoW	Description of Work
EC	European Commission
IPR	Intellectual Property Rights
NDA	Non-disclosure agreement
PO	Project Officer
QA	Quality Assurance
R&D	Research and Development
WP	Work Package

Partner Short Names

Short Name	Name
FRAUNHOFER	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (DE)
IRT	Institut für Rundfunktechnik GmbH (DE)
RBB	Rundfunk Berlin-Brandenburg (DE)
ULANC	Lancaster University (UK)
MEDIASET	Reti Televisive Italiane S.p.A. (IT)
LEADIN	Leadin Oy (FI)
FINCONS	Fincons SpA (IT)
IMT	Institut Mines-Telecom (FR)

List of Figures

Figure 1. – RBB Usability Test Schedule