

University of Geneva

BBL-IS Project Management Protocol

CISA-NeuroCenter-BBL

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Evolution table

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I. Introduction

This document aims to support researchers in the process of conducting a project using the BBL-IS, the immersive virtual reality (IVR) system of the Brain and Behavior Laboratory (BBL).

The same process can be applied to develop a 3D/VR project using others BBL facilities (MRI, EEG, Psychophysiology, etc.).

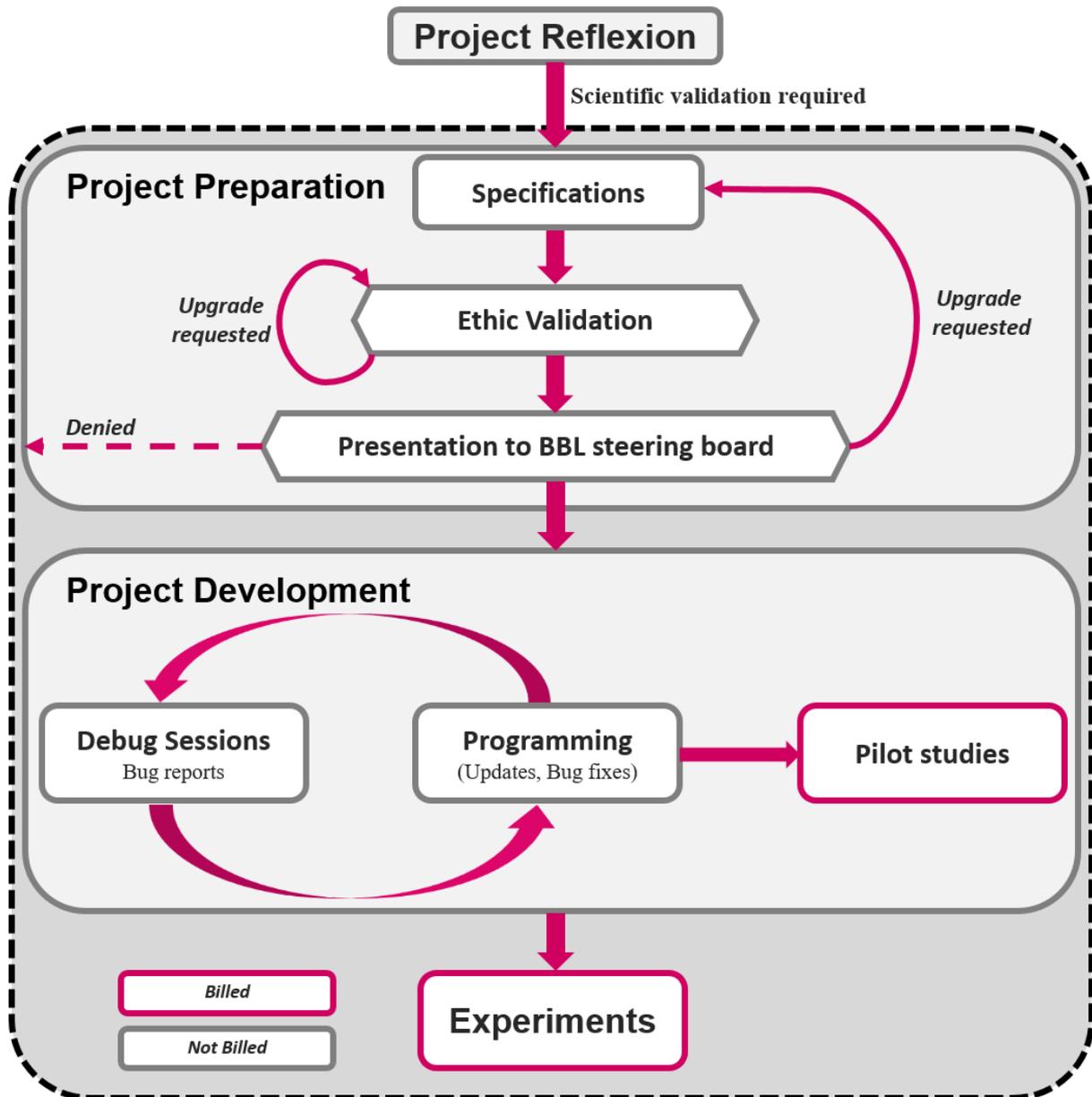
II. What is the BBL-IS ?

This system allows researchers to benefit of the state of the art in virtual reality for creating and using immersive virtual environments. The manipulations of visual, auditory, and olfactory sensations coupled with the possibilities to track eyes, head, and body movements of one participant allow scientists to investigate complex behaviors in realistic scenes. Moreover, physiological measures (e.g., heart rate, skin conductance, muscular activity) as well as EEG measures can be done into the system. This tool allows researchers to immerse some participants in a virtual world presenting various situations and stimuli, entirely controlled by researchers.

For more information: <https://bbl.unige.ch/facilities/bbl-is/>

III. How to conduct a project ?

To conduct a project using the BBL-IS, please follow the process described below:



IV. Project preparation

Note: Before starting to prepare a project using the BBL-IS, your project must be scientifically approved by your research supervisor.

The project preparation is conducted in collaboration with the BBL Staff, following these steps:

1. Specifications

Step 1: Ask the BBL-IS manager (Emmanuel.Badier@unige.ch) for the **BBL-IS Project Preparation.docx** document. Fill and send back the **BBL-IS Project Preparation.docx** document to the BBL-IS manager.

Step 2: Set a meeting with the BBL-IS manager to refine the project framework. This meeting will help to understand the goals and the technical complexity of your project, all details, examples, and schemas are welcome.

Step 3: Fill the **BBL-IS Project Preparation.docx** including all feedbacks from “Step 2”.

Steps 2 & 3 should be repeated until the specifications are finalized.

2. Ethic validation

The ethic approval is granted by the Ethics Committee of the relevant faculty (e.g., Commission cantonale, Swissethics or FPSE). The BBL steering board is not responsible of the ethic validation.

3. Presentation to the BBL steering board

You will have to make some slides to present your project to the BBL steering board.

The goal is mainly to clarify the feasibility, design, and resources needed for the project. The scientific relevance and interest might be also discussed.

The presentation should be max 15-20 minutes including discussion, and concern only one single study (not a whole research program). It should present the following points:

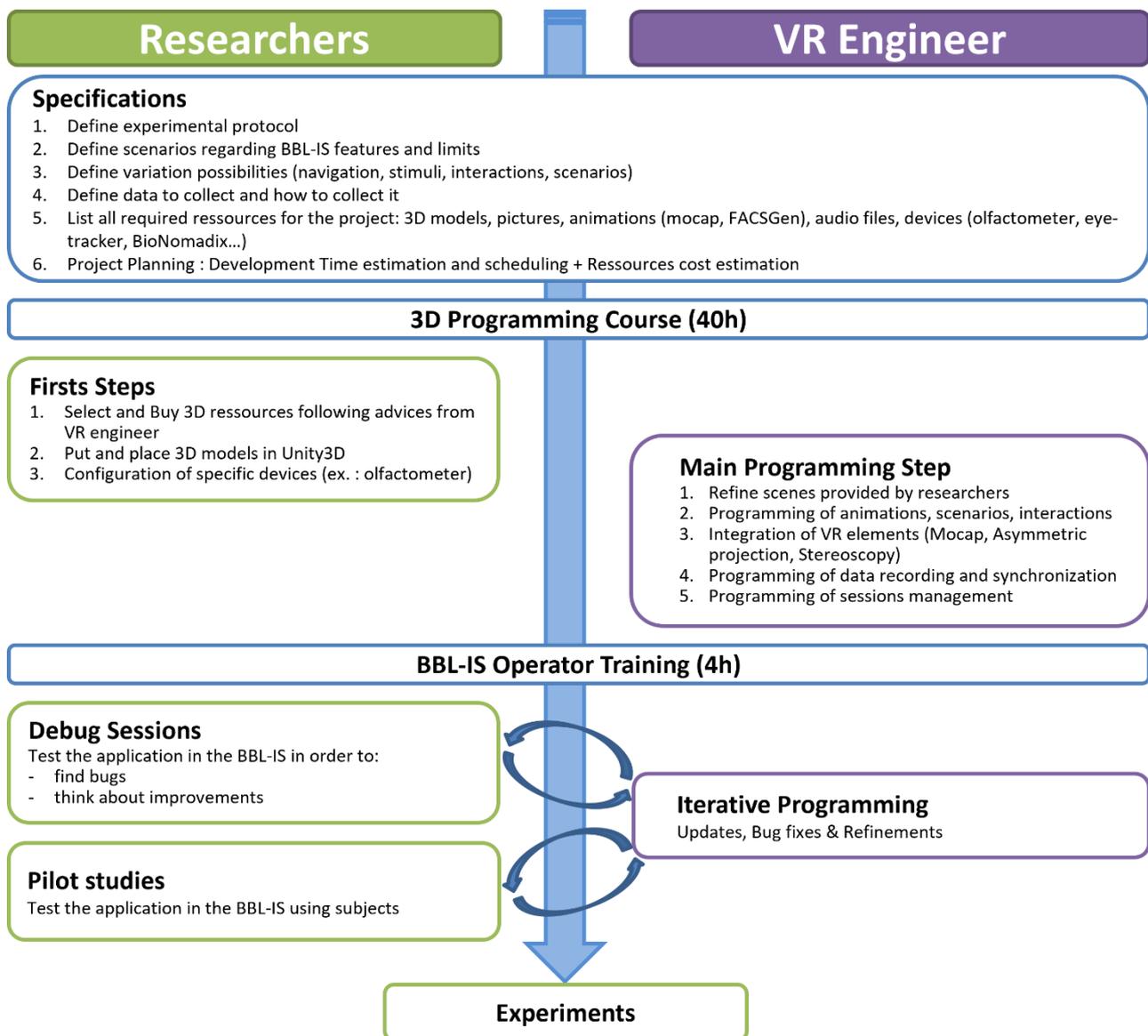
- Project title
- Principal investigator, collaborator(s)
- Brief background and previous studies
- Preliminary results if any
- Aims of current study, and reasons to use 3D/VR
- Experimental design, conditions, outline, number of trials and number of participants
- Required physiological measurements (e.g., olfactometer, eye-tracker, etc.)
- Estimation of the duration for the development phase (provided by the BBL-IS manager)
- Estimation of the duration for all experimental sessions (excluding pilots)
- Estimation of the cost for outsourcing and resources (3D models, etc.)
- Operator(s) name(s)
- Methods of analysis, planned comparisons.

V. Project development

The BBL-IS is powered by a couple of software responsible to create realistic simulations. Unity3D is the game engine used to build virtual environments with a library of components (3d models, textures, sounds, scripts, etc.). Additional libraries are used to configure and run the experiments with all the VR features (Mocap, Asymmetric projection, Stereoscopy).

As a contributor researcher, you will be able to do some adjustments by yourself using the Unity3D game engine. This will allow you to tune the visual part as you want and to configure stimuli according to your experimental protocol. For this purpose, you will be able to attend the [3D programming course](#) given each year. You can contact the BBL-IS manager for more information (Emmanuel.Badier@unige.ch). Unity3D is well documented, and it can be installed on both PC and Mac: <https://unity3d.com/>.

The following schema sums up the development process:



VI. Cost for sessions using the BBL-IS

Hourly fees for researchers using the BBL-IS are implemented with the aim to support the overall functioning and general mission of the virtual reality platform. These charges are used to cover the following items:

- Running everyday costs of the platform (consumables, small equipment, data archiving and disk space, etc.)
- Technical support by BBL staff (especially salary of technicians)
- Acquisition of new devices of interest to several researchers
- Maintenance of the BBL-IS - insofar as the budget allows

The allocation of resources to these different items is overseen by the BBL steering committee as a function of the overall budget available and priorities for users. This allocation takes into consideration other resources invested in the BBL through other funding sources such as the annual budget provided by UNIGE and participating faculties (MED, FPSE), as well as the contributions from the CISA directly or indirectly via UNIGE. The charges are paid on a dedicated account of the University that is overseen by the BBL steering committee. Information about the billing procedure is provided and updated on the BBL website (<http://bbl.unige.ch>).

The BBL-IS charges for studies are dependent on the type of study as detailed below:

- For academic centers who are part of UNIGE:
 - An hourly charge of CHF 100.-; CHF 70.- for NEAD members; CHF 85.- for CISA & Labnic members applies during prime time.
 - An hourly charge of CHF 50.- applies during off-hours and weekends.
- For academic centers outside UNIGE and partner institutions:
 - For an independent study (outside of a scientific collaboration with BBL core members), an hourly charge of CHF 140.- applies at all times.
 - For a study involving a scientific collaboration with BBL core members, an hourly charge of CHF 85.- applies at all times.
- For industrial partners who are the promoters of a study:
 - An hourly charge will be negotiated dependent on the level of support required. A price of CHF 1500.- per day is given as a minimum price.

Special dispositions:

- **A CHF 1000.- flat-rate is applied per academic project.** It covers the time spent by the VR engineer on the project (the time spent to design and manage the projects with researchers, and the time spent to train operators).
- **The time spent by the VR engineer to develop academic projects is not billed.** But some parts of the development could be outsourced and budgeted in the project (e.g., to hire an intern developer) as defined during the project preparation phase.
- **Charges are billed for pilot studies as well as real experiments.** Number of pilot studies will be defined with the advice of the VR engineer during the project preparation. During the development of the application, if additional pilots are needed, they will not be billed.
- In some cases, where the duration of a study may not be fixed from the outset, bulk charges can be negotiated with the steering committee of the BBL for a fixed period.
- Maintenance hours of the BBL-IS equipment and methodological development of virtual reality techniques conducted in agreement with the head of BBL-IS staff are not billed.
- **Cancellations will be billed to half when they are notified less than 48 hours** before the booked slot and cannot be re-allocated to another user.
- Should session not be possible due to unforeseen reasons, such as equipment failure, this must be signaled with an email to the BBL-IS manager (Emmanuel.Badier@unige.ch).

Note: BBL-IS time allocation can be requested only for studies that have already been submitted to and accepted by the BBL steering committee, and whose protocol has been validated by the ethical committees of the institution of the corresponding researchers.

Billing procedure: Invoices are sent to researchers after the end of a given study or twice annually depending on the calendar of studies (e.g., when longer than a semester). Should payment for a prior invoice be outstanding, the BBL may revoke the permission for scheduling additional slots. The charges are based on the number of entries registered in the on-line calendar system accessible at this address: <https://bbl.calpendo.com/>.

VII. Booking slots at BBL-IS

The booking system for the BBL-IS is accessible at the following address:

<https://bbl.calpendo.com/>

To book a session for the BBL-IS, click on a free slot in the calendar pane and fill the form with the corresponding information. Before confirmation, ensure you have activated the email reminder system by checking: "Send reminder email", with a notice period of 120 minutes to at least "Booking booker".

The BBL-IS is a complex system, thus a trained operator is requested to conduct experiments. The operator could be the researcher himself. You can ask for an available operator when you book your sessions, or you can attend a "BBL-IS operator training" to be granted as an operator.

Each request will be automatically sent to the technical manager (Emmanuel Badier) and the academic manager (Didier Grandjean) to be approved.