Managing Affective-learning THrough Intelligent atoms and Smart InteractionS

Pending of approval from the European Commission

D1.8 Learning Game Programming Tool

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Editor(s):	Thomas TECHENE, Andrew Pomazanskyi
Responsible Partner:	*DXT, NG*
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Abstract:	This document presents detailed and step-by-step instruction set on how to use the MaTHiSiS Learning Game Programming Tool (desktop). It includes guidelines on the installation and configuration of the application.
Keywords:	Games, Learning Material, Content
Related Deliverable(s)	Learning Game Programming Tool User Manual

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Document History

Version	Date	Change editors	Changes
0.1	14/01/2019	Thomas TECHENE, DXT	First version
0.2	17/01/2019	Thomas TECHENE, DXT	Executive summary
0.3	21/01/2019	Thomas TECHENE, DXT	Final version
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1.0	29/01/2019	Jens Piesk, Andrew Pomazanskyi, NG	Addressing reviewers' feedback, finalization of download path, formatting.

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List of Acronyms

Abbreviation / acronym	Description
API	Application Programming Interface
DoW/DoA	Description of Work/Action
LGPT	Learning Games Programming Tool
ROI	Return on Investment
UI	User Interface

Table 1: Definitions, Acronyms and Abbreviations

Project Description

The MaTHiSiS learning vision is to provide a novel advanced digital ecosystem for vocational training, and special needs and mainstream education for individuals with an intellectual disability (ID), autism and neuro-typical learners in school-based and adult education learning contexts. This ecosystem consists of an integrated platform, along with a set of re-usable learning components with capabilities for: i) adaptive learning, ii) automatic feedback, iii) automatic assessment of learners' progress and behavioural state, iv) affective learning, and v) game-based learning.

In addition to a learning ecosystem capable of responding to a learner's affective state, the MaTHiSiS project will introduce a novel approach to structuring the learning goals for each learner. Learning graphs act as a novel educational structural tool. The building materials of these graphs are drawn from a set of Smart Learning Atoms (SLAs) and a set of specific learning goals, which will constitute the vertices of these graphs, while relations between SLAs and learning goals constitute the edges of the graphs. SLAs are atomic and complete pieces of knowledge, which can be learned and assessed in a single, short-term iteration, targeting certain problems. More than one SLA, working together on the same graph, will enable individuals to reach their learning and training goals. Learning goals and SLAs will be scoped in collaboration with learners themselves, teachers and trainers in formal and non-formal education contexts (general education, vocational training, lifelong training and specific skills learning).

MaTHiSiS is a 39-month long project (originally 36-month long, extended after contract amendment), co-funded by the European Commission Horizon 2020 Programme (H2020-ICT-2015), under Grant Agreement No. 687772.

Executive Summary

This document reports on the progress and final solution of the Learning Game Programming Tool (LGPT) desktop application, developed as part of the MaTHiSiS project. This deliverable supports the delivery of a standalone software component envisioned as a commercial package and provides evidence of reaching a milestone at the same time being ready for future commercialization activities.

The document provides a detailed description of the application as well as a detailed guideline from the point of installation up to a full configuration of the Learning Game Programming Tool.

This document includes minimal required information for the installation and configuration of the LGPT, including license registration and steps to create the first project. Detailed guidelines about how to use the Learning Game Programming Tool Editor can be found in the **Learning Game Programming Tool User Manual** [1].

1. Introduction

1.1 Document purpose and context

The purpose of this document is to provide the users of the MaTHiSiS Standalone **Learning Game Programming** tool with easy-to-follow instructions, in order to install, configure and use the application. The document starts by presenting the installation process with details that guide the user throughout the whole process step-by-step. An explanation of the applications User Interface (UI) follows. The document describes the functionalities of the UI buttons, as well as the flow of the user interactions, in order to use the application properly. In the last chapter, the applications dependencies and any additional programs or required files are reported.

1.2 Document structure

This document consists of the following chapters:

Chapter Error! Reference source not found.**:** Installation of the MaTHiSiS Standalone Learning Game Programming Tool

Chapter 3: Dependencies and Pre-conditions

1.3 Learning Game Programming Tool in a nutshell

The Learning Game Programming Tool (LGPT) is a visual authoring platform for the creation of interactive serious games. It is based on the results of the R&D MAGELLAN project[1] as well as the INSCAPE product, commercialized by DXT. The LGPT goal is to provide the means to several user profiles to create Learning Material, using pre-defined and easy to set up building blocks, or already existing educational content. It is intended to be used by non-technical audience as well as content creator professionals.

[1] http://www.magellanproject.eu/

2. Installation of the MaTHiSiS Learning Game Programming Tool

2.1 Installation

The Learning Game Programming Tool can be downloaded from the MaTHiSiS website http://mathisis-project.eu/en/content/learning-games-programming-tool. Selecting the component of interest (LGPT) will lead the user to a download link of the tool itself and a trial license.

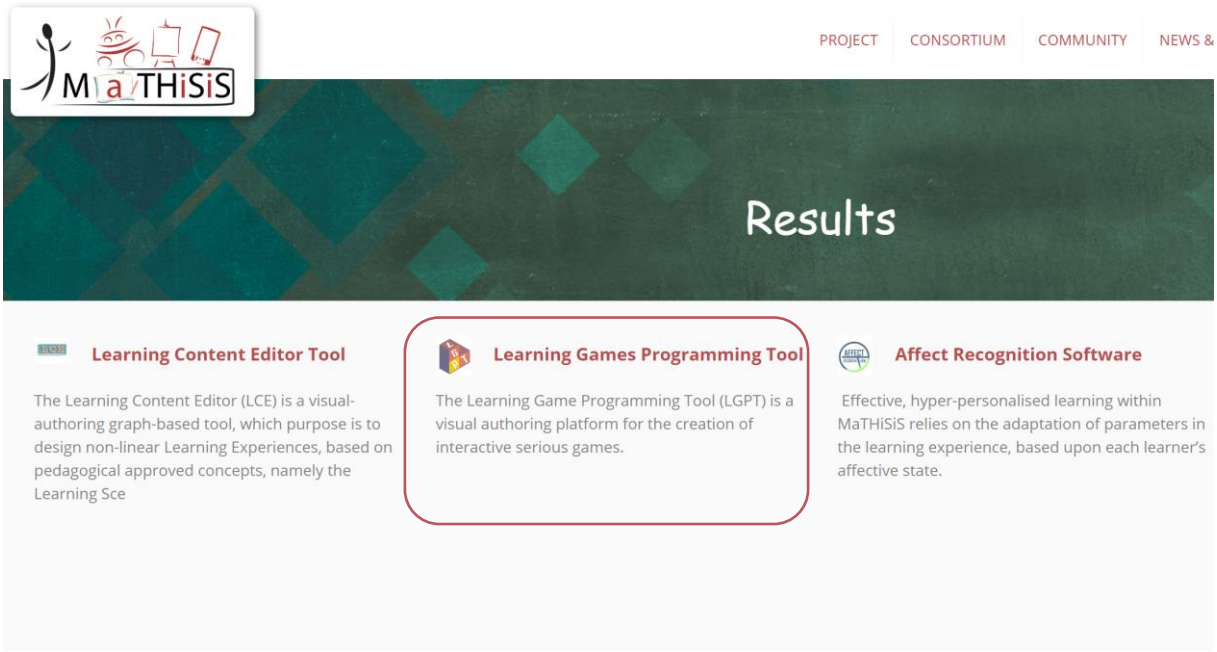

Figure 1 MaTHiSiS Website Components download section

Following the links provided in the download section of the **Learning Game Programming Tool** three files need to be downloaded to execute the installation which include the LGPT tool, the Plugin and the license. All of the files need to be downloaded in the same folder on a desktop computer.

User must download the MaTHiSiS Plugin at the same location, named "**LearningGameProgrammingToolMathisisPlugin.exe**".

After downloading the files, proceed with the following steps:
- Double click on the **LearningGameProgrammingTool.exe** installer and follow the wizard to install the software.

Follow the installation wizard:

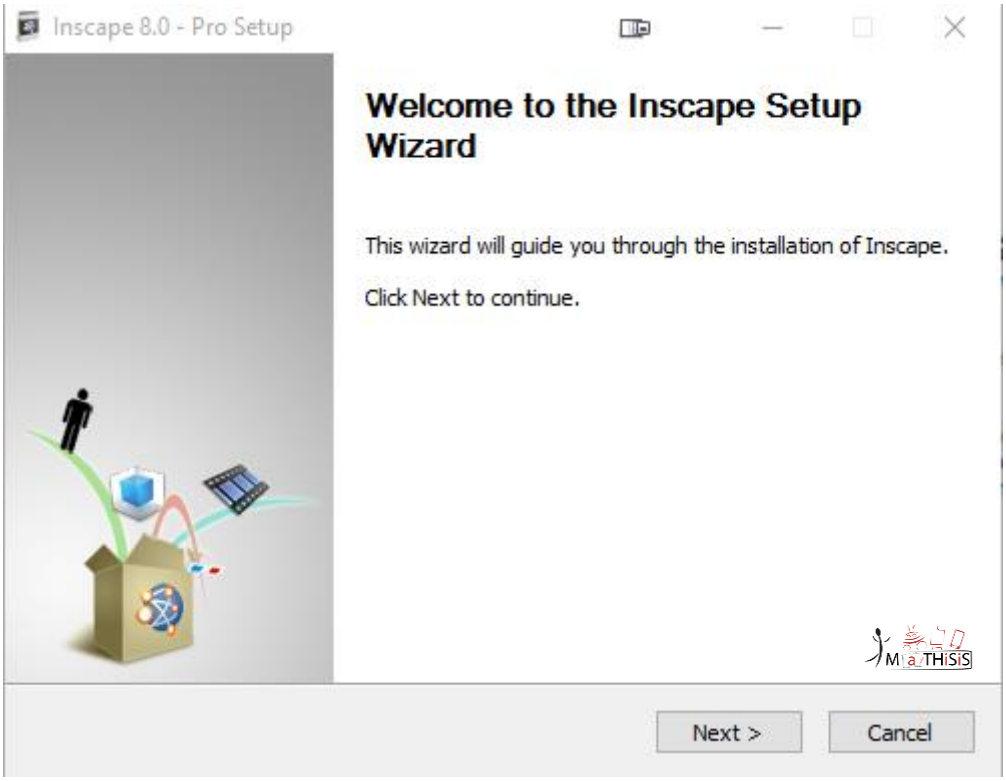

Figure 2: Installation of MaTHiSiS Learning Game Programming Tool (1)

- Click on the “Next” button

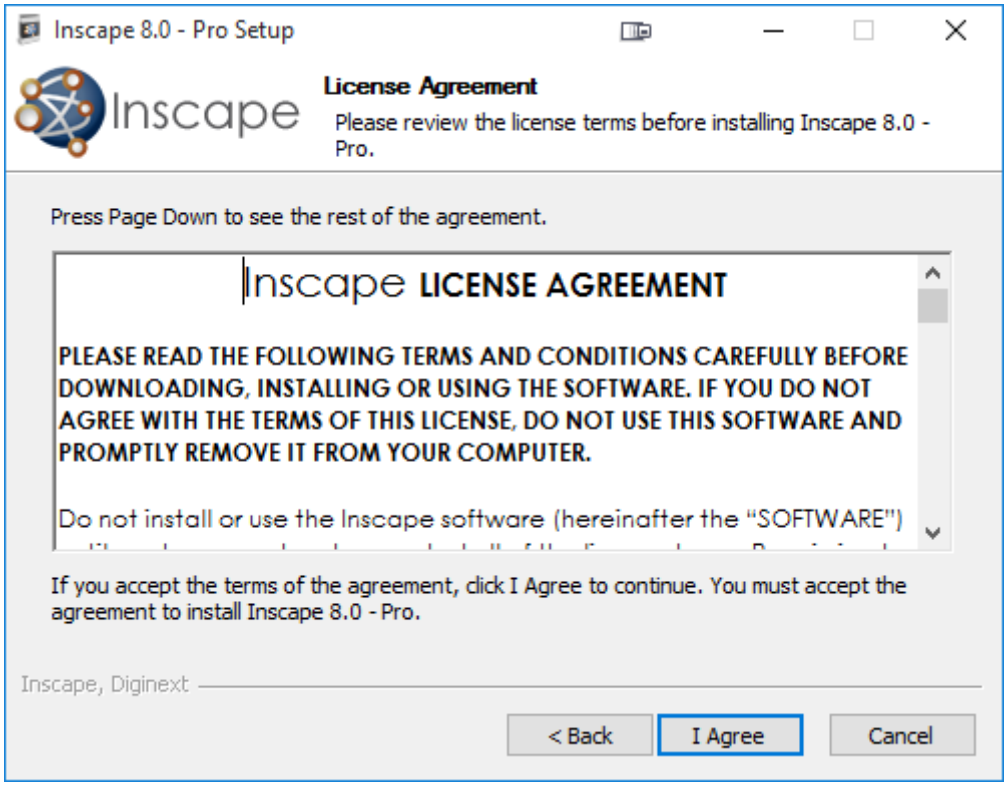

Figure 3: Installation of MaTHiSiS Learning Game Programming Tool (2)

- Accept the license agreement, clicking on “I agree”

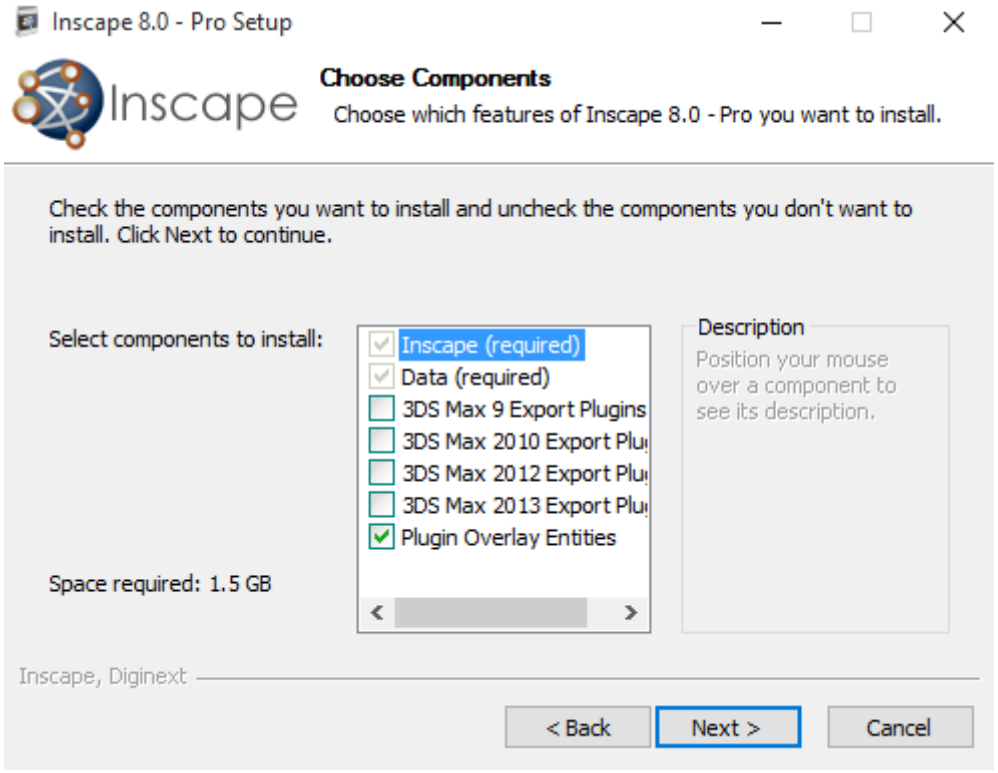

Figure 4: Installation of MaTHiSiS Learning Game Programming Tool (3)

- Choose the components needed for the installation. By default, everything needed is set up at the beginning. Click on the Next button.

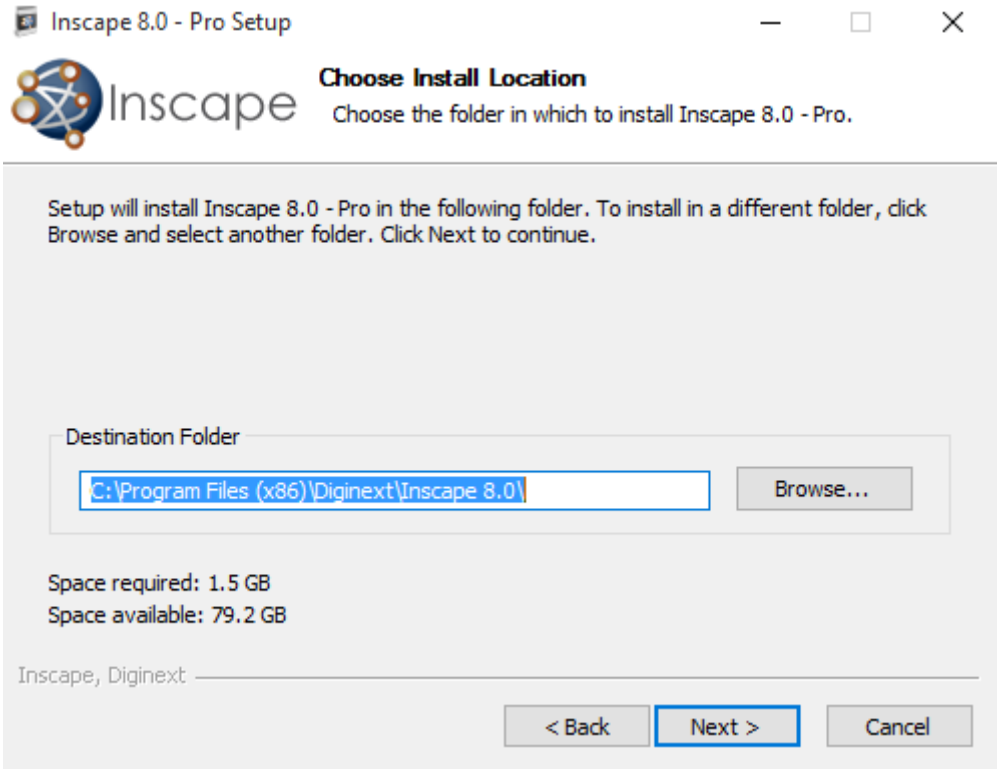

Figure 5: Installation of MaTHiSiS Learning Game Programming Tool (4)

-Choose the installation location folder

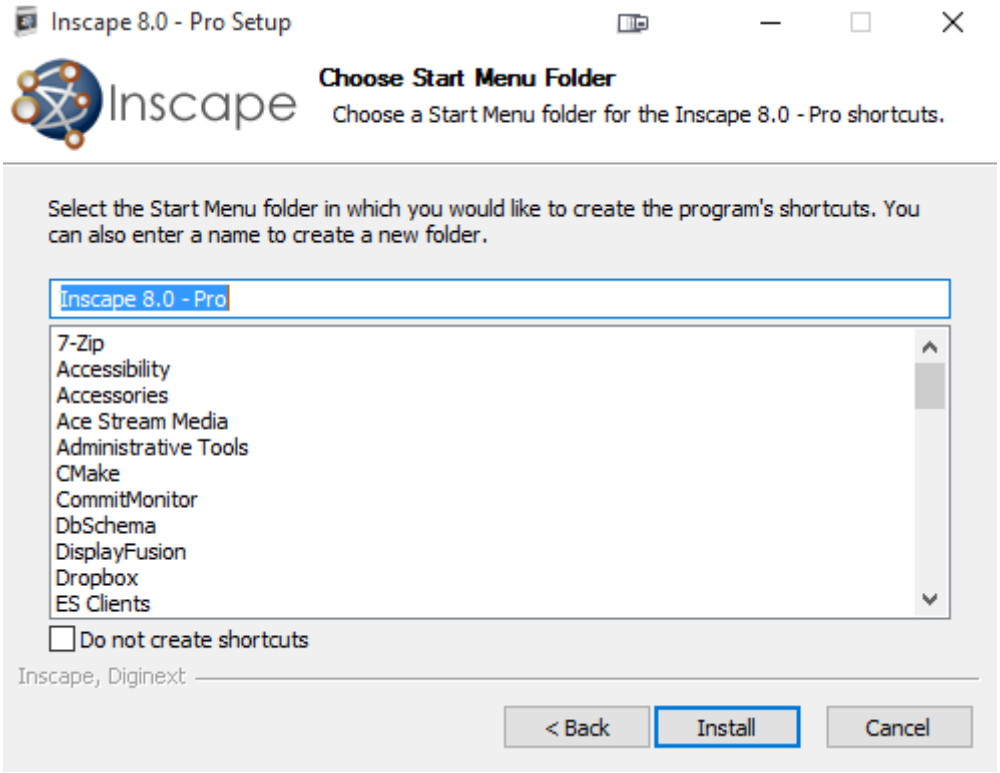

Figure 6: Installation of MaTHiSiS Learning Game Programming Tool (5)

- Choose of the Start Menu Folder

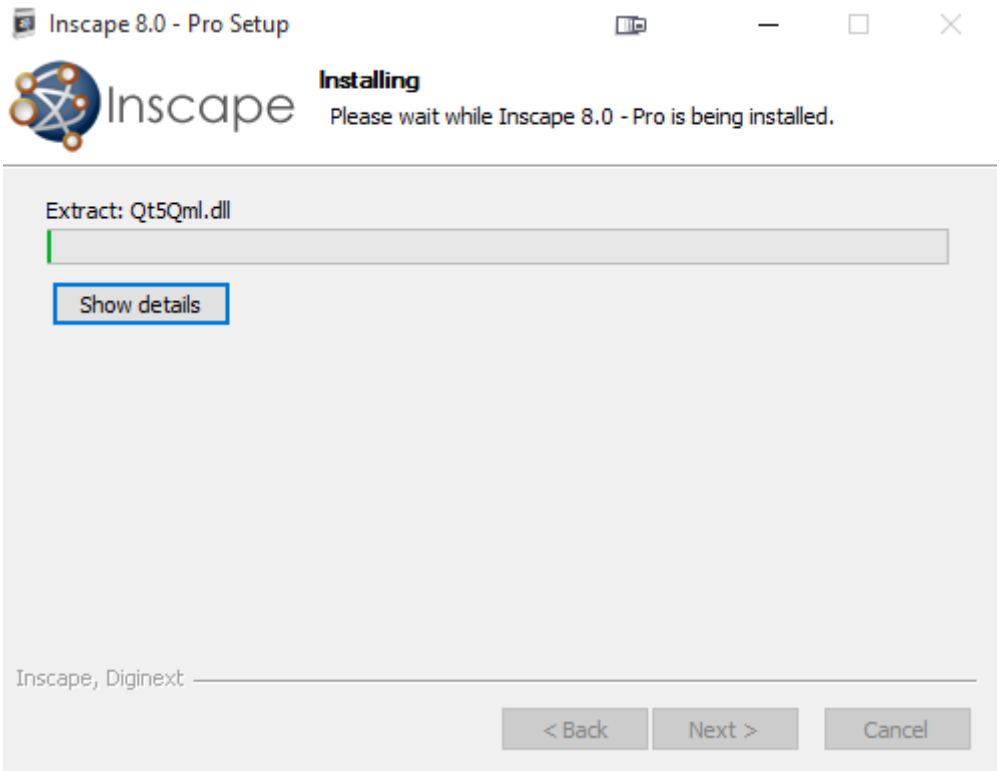

Figure 7 - Installation of MaTHiSiS Learning Game Programming Tool (6)

- Wait until the end of the installation

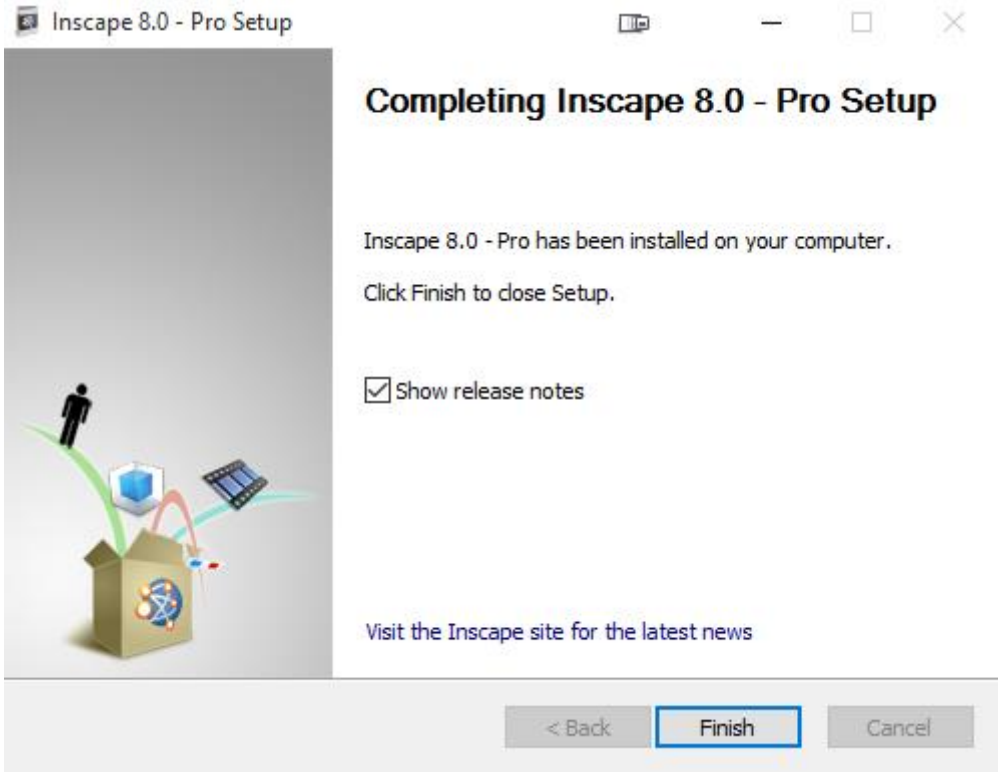

Figure 8 - Installation of MaTHiSiS Learning Game Programming Tool (7)

-Click on the Finish button

Once the Learning Game Programming Tool is complete, you must install the LGPT MaTHiSiS plugin provided (hereafter: inMathisis plugin).

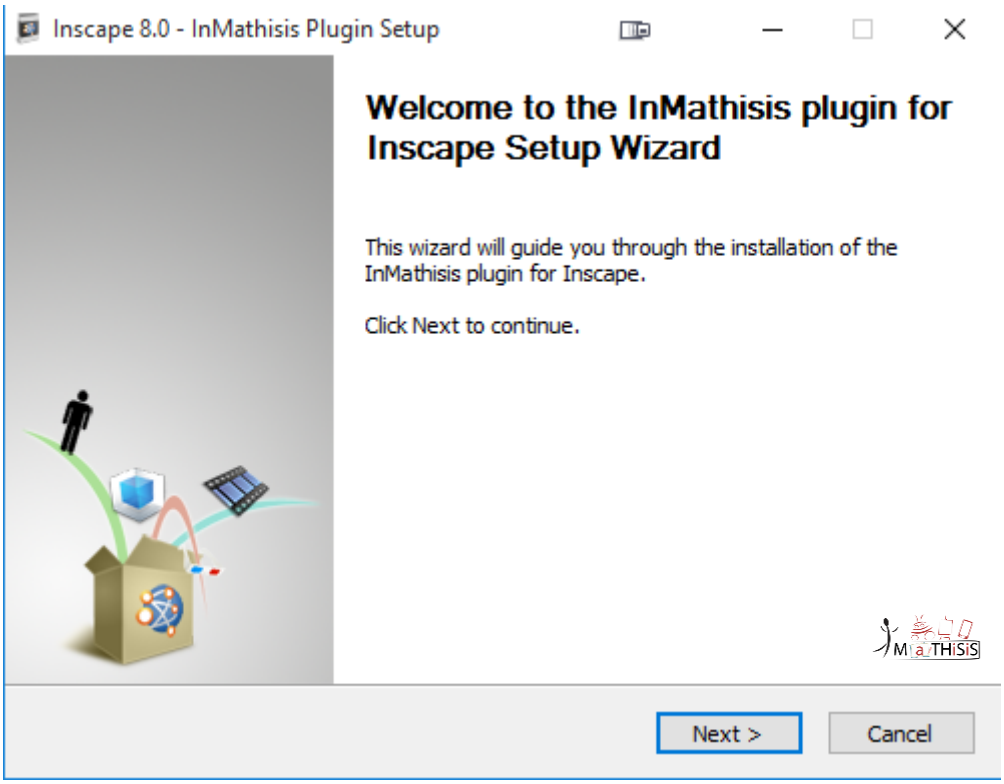

Figure 9 - Installation of MaTHiSiS Learning Game Programming Tool (8)

- Click on the next button
-

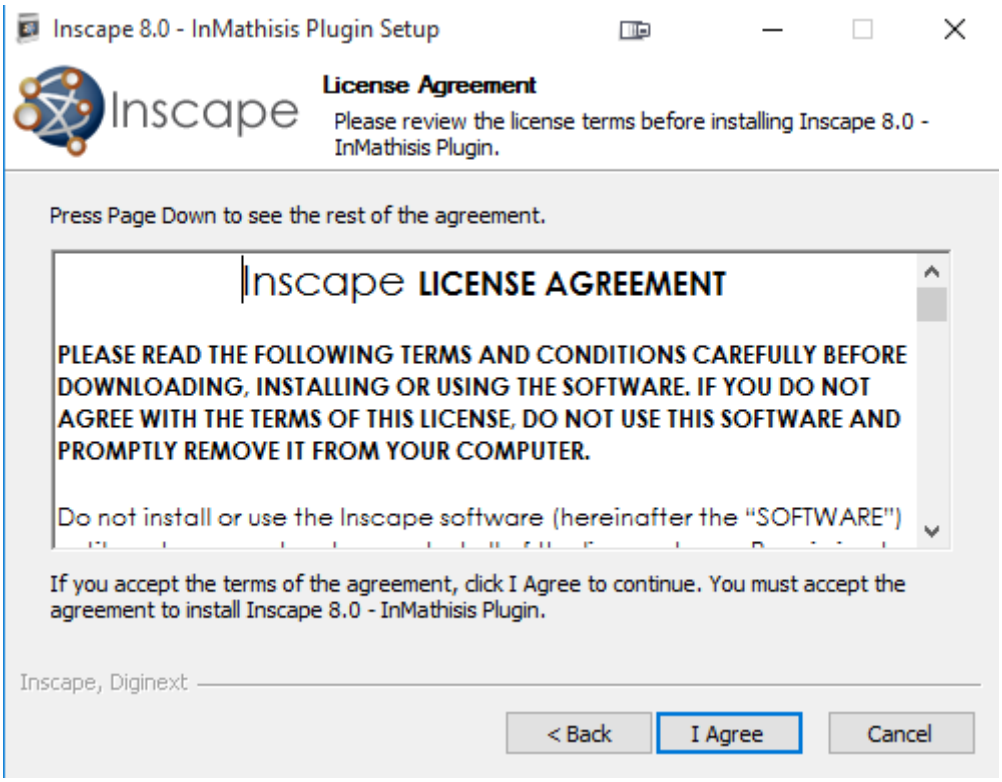

Figure 10 - Installation of MaTHiSiS Learning Game Programming Tool (9)

- Accept the license agreement as previously

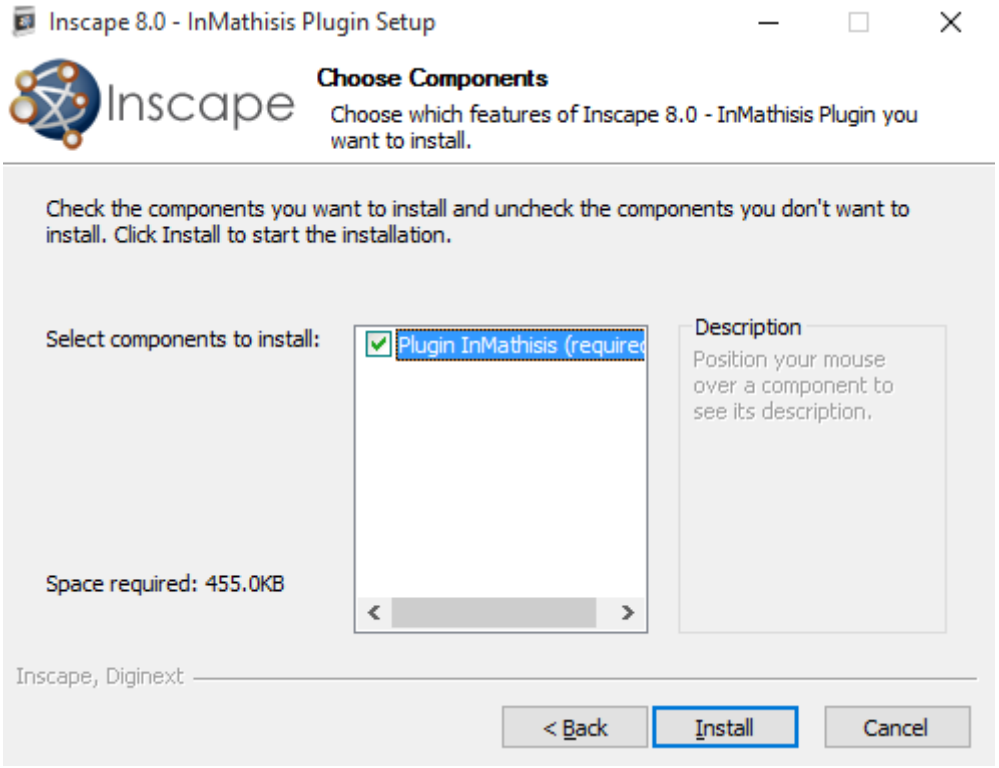

Figure 11 - Installation of MaTHiSiS Learning Game Programming Tool (10)

- Choose the component to install, in this case there is only one pre-selected.

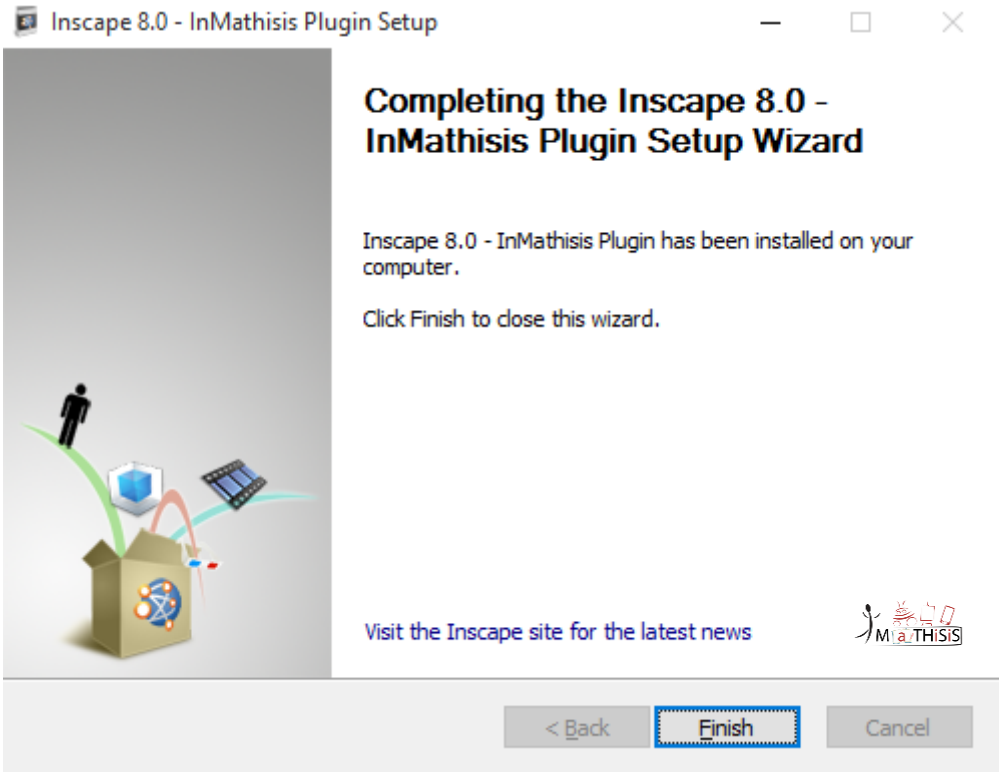

Figure 12 - Installation of MaTHiSiS Learning Game Programming Tool (11)

- Click on the Finish button to complete the installation

2.2 License registration

In order to use the LGPT, you must first register with a license either provided with the software, either by using directly the functionality “Request a license”.

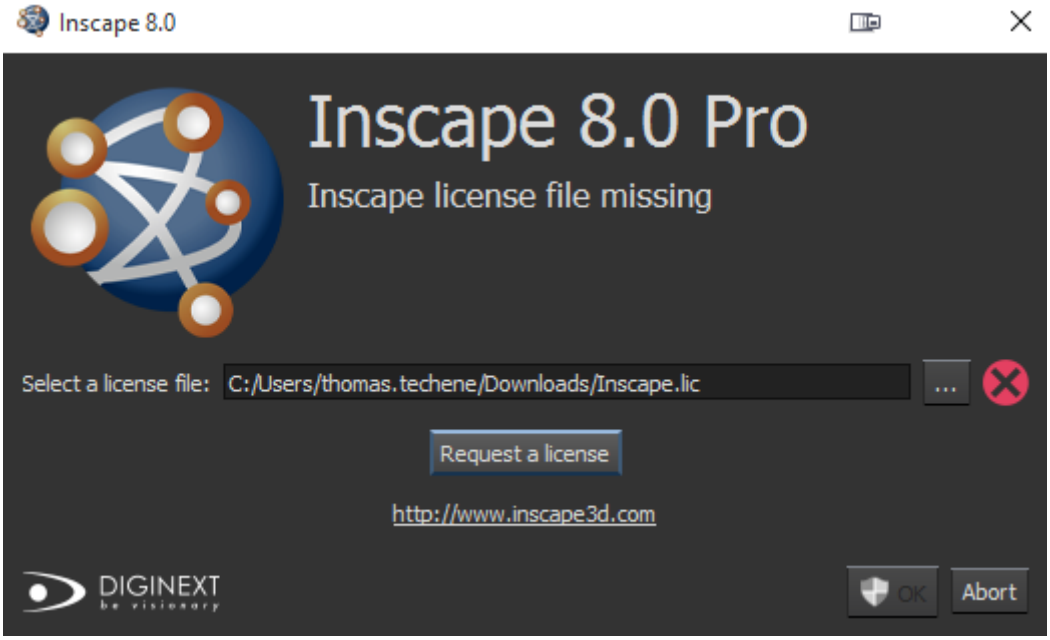

Figure 13 - License Registration

- Click on the Request button

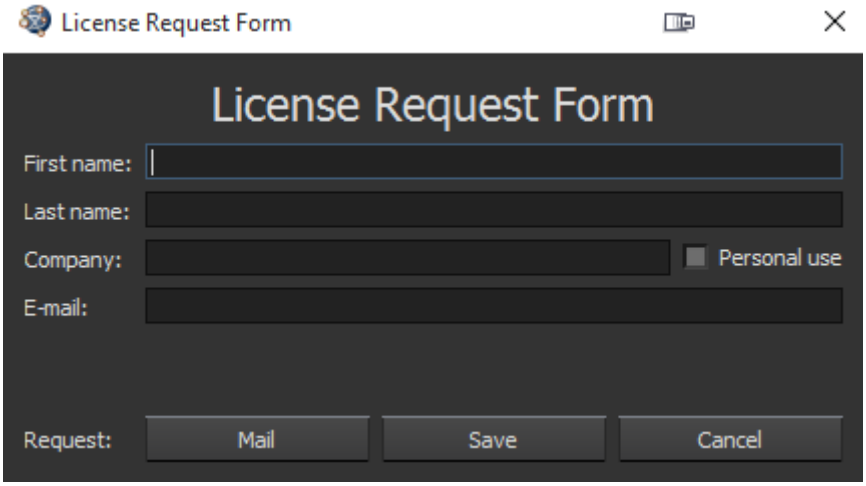

Figure 14 - License Request Form

- Fill the information required in the form. You can save you request on your machine (.vrli format), but more important is to send a mail request, clicking on the “Mail” button. The support team that will provide you a license will then contact you.

2.3 First project

In the following section the user will see the very first steps of a project creation. In most cases the user will proceed with the “Create Application” option, for creating a new project.

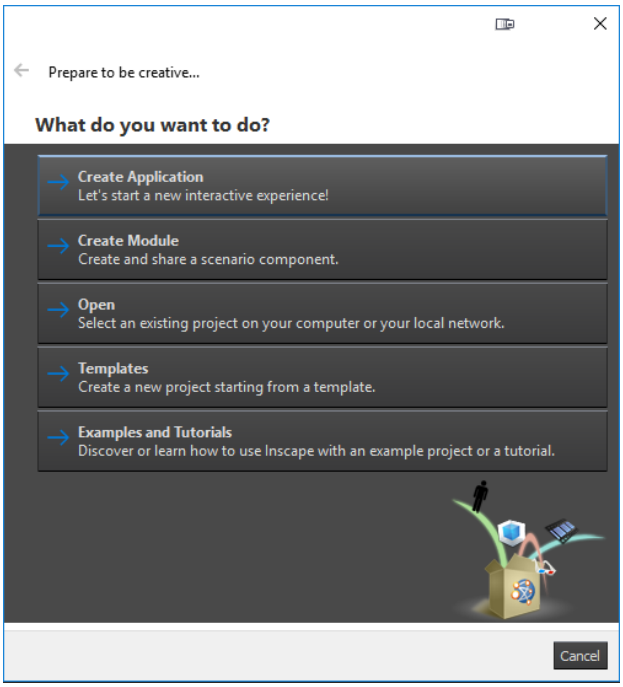

Figure 15 - Starting page

The next window is about the basic configuration of the project (name, location).

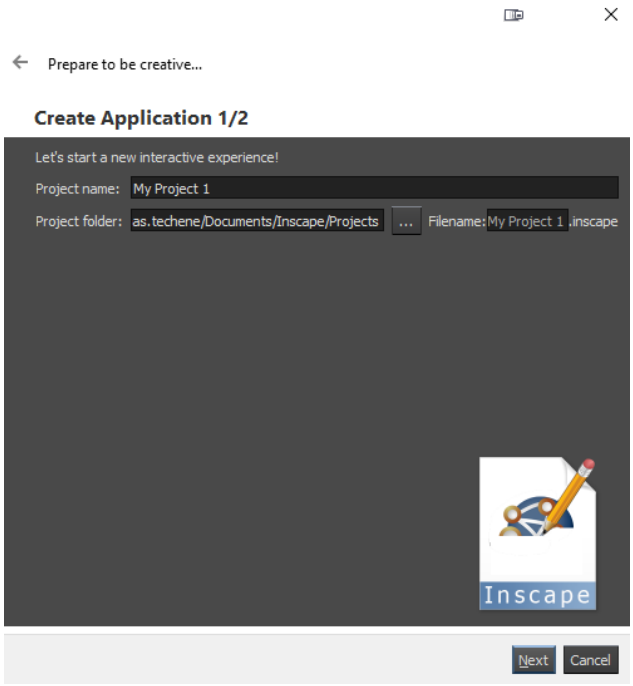

Figure 16 - Project creation (1)

Last but not least, several options of plugins are at your disposal. The 3D plugin is pre-selected by default, allowing you to create a 3D application. Do not forget to select the MaTHiSiS plugin which is mandatory.

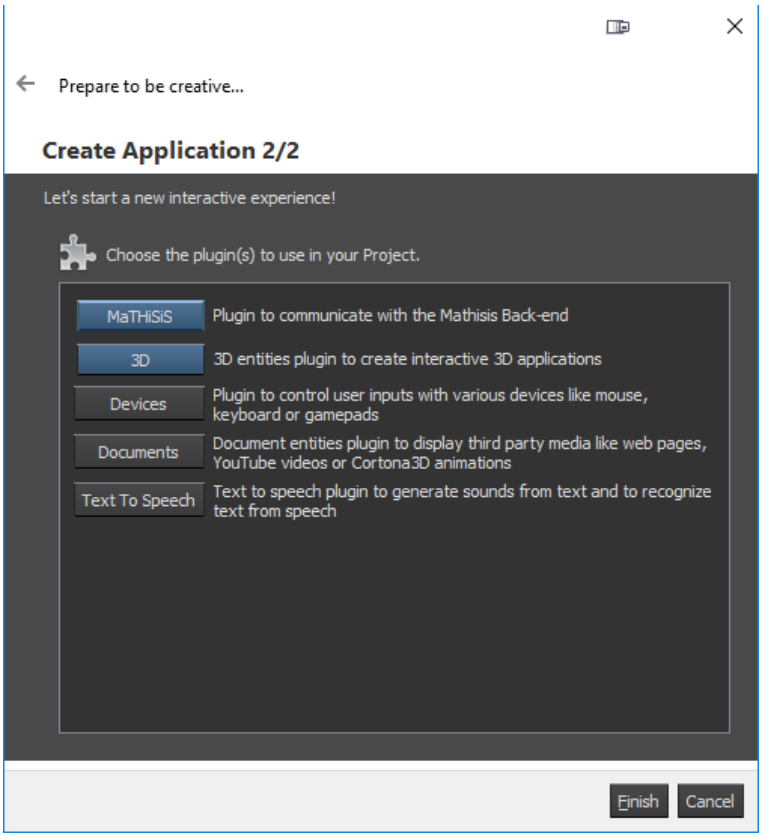

Figure 17 - Project creation (2)

3. System requirements

3.1 Minimum system requirements

Operating System: Windows 7, 8.1, 10

Processor: Intel® Pentium® or AMD® Athlon® 2.0 GHz

Memory: 2 GB

Hard Disk Space: 1 GB free

Video: OpenGL compatible graphics card with 256 MB dedicated memory and latest driver

Integrated Intel® graphics cards are partially supported.

Please contact Inscape support for more information.

Sound: Windows compatible sound card

Network: Ethernet card

3.2 Recommended system requirements

Operating System: Windows 7, 8.1, 10

Processor: Dual-core (or better) Intel® Core i5® or AMD® FX® 3.0 GHz

Memory: 4 GB

Hard Disk Space: 1 GB free

Video: NVIDIA® GeForce™ GT series, AMD® HD5000™ series or higher with 512 MB dedicated memory

A screen resolution of 1366x768 or better is strongly recommended.

For the editor, a dual screen configuration is even better.

Sound: 3D/surround sound card with surround speaker system

Network: Ethernet card

4. Commercialization of the component

To ensure successful exploitation of the tool, certain market penetration assumptions and activities to increase the visibility of the solution provided have to be made. Project partners have performed an analysis and evaluation of various ecosystems that could potentially allow future discovery, monetization, marketing and facilitation of MaTHiSiS tools adoption in various domains. The European Commission realizes the potential and importance of applied and serious gaming solutions being part of the Horizon 2020 Programme funding scheme and supports the technology penetration in various domains that are deemed to address various societal challenges not only in education, but also in social cohesion, security and health. Such commitment of the policy makers becomes apparent with the provision of additional subsistence to a number of platforms and marketplaces that serve as a bridge between research institutions and industry players making software tools and open APIs available for further research and market adoption.

Thus, MaTHiSiS has established certain liaison activities with RAGE[2] marketplace to benefit from the value proposition the platform offers and at the same time take advantage of distributing such components as LGPT. The value propositions are described as the following[3]:

1) an interoperable set of advanced technology assets

2) proven practices of using asset-based applied games in various real-world contexts,

3) centralised access to a wide range of applied software modules, services and resources,

4) an online social space (the RAGE Ecosystem) that arranges and facilitates collaboration that underlies progress and innovation,

5) workshops and online training opportunities for both developers and other stakeholders,

6) assets-based business cases that support the industries at seizing new business opportunities, and

7) a business model and launch plan for exploiting the RAGE Ecosystem beyond the project´s duration.

[2] https://www.gamecomponents.eu/
[3]https://cordis.europa.eu/project/rcn/194166_en.html

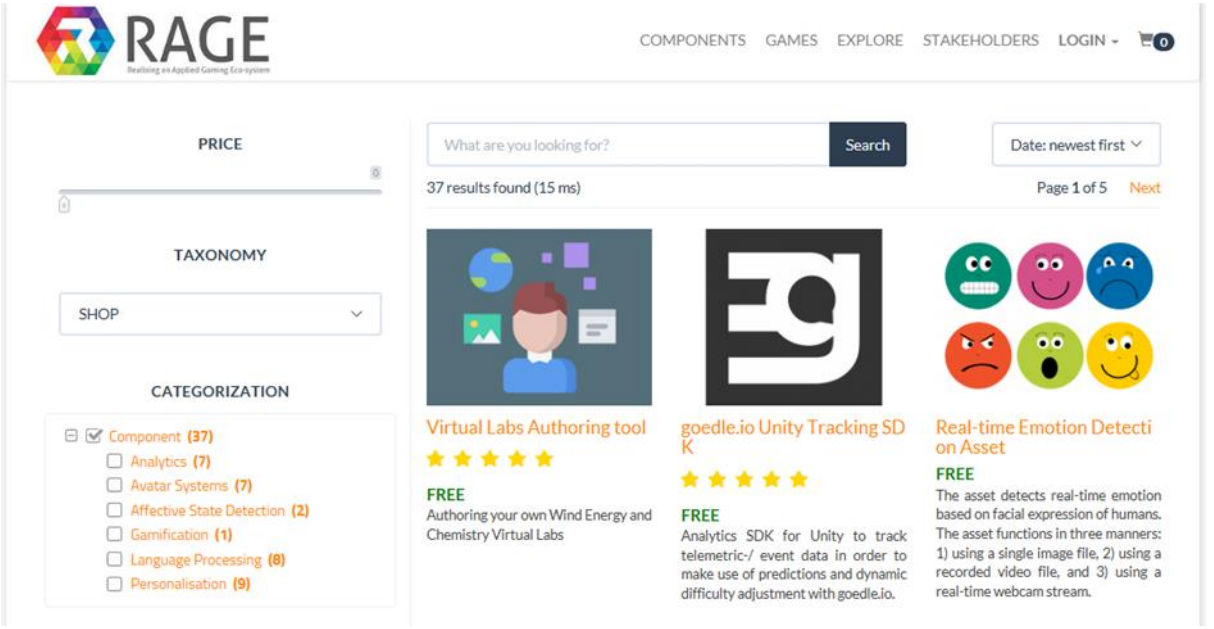

Figure 18 RAGE Marketplace

Figure 17 depicts the RAGE marketplace that offers a number of categories where the components can be submitted, discovered and eventually acquired. To ensure that the components developed within MaTHiSiS project meet the requirements of the RAGE marketplace software tools submission process, a dedicated metadata document has been created as part of the commercialization package which in turn will enable partners to further submit their technologies to third party platforms, marketplaces and repositories thus providing yet another mean to get Return On Investment (ROI) on the tools developed. The metadata document followed the following structure:

- The name of the component
- Component description that is also used during the search queries
- Short non-technical description
- Technical description of the component including (1) what the component does; (2) what it could be used for, (3) what inputs are needed; (4) what outputs it produces.
- Picture and logo as a visual cue/tile in the search results
- Optional release date
- Optional language settings
- Optional access URL in case a home page or a GitHub page exists
- Development environment
- Target platform
- Programming language used
- Applied computing concepts according to the ACM Computing Classification System
- Optional possible goals or purpose followed when developing a component/module
- Optional indication of the component category that will be listed in the public RAGE Ecosystem Portal
- Optional keywords with module attributes

- Version of the exploitable result, its notes, development status and a commit URL in case the software is in a versioning system
- License type with an optional indication to a license URL or a description of any specific conditions and restrictions applying to the use of the component
- Contact details of the legal owner and creators of the component
- Finally, a detailed technical description explaining what the component does, what inputs it needs, how it functions, how it can enhance applied games, technical requirements, operational constraints, source code, possible supporting documentation such as the user guides and tutorials, help files, demonstrations, design models, setup files, installation scripts, configuration data, setup guides, demonstration
- Other resources such as videos, snapshots, etc.

5. Conclusion

D1.8 provides evidence of the commercial packaging of the Learning Game Programming Tool to be completed and available through various means. First and foremost through a dedicated page within MaTHiSiS project website, but also being ready to be distributed through third party platforms (e.g. RAGE) for which a separate metadata document was created.

The document provides the installation guide for the Learning Game Programming Tool to enable interested stakeholders to download, install and run the application for their own purposes.

6. References

[1] DIGINEXT (ed.): Learning Game Programming Tool User Manual.