

Intellectual Output 1

A4 Module development

MODULE CONTENT 4



Deliverable: IO1.A4

15.10.2021

EA

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Project Number: 2020-1-UK01-KA201-078934

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1.1 Learning Outcomes

This module and accompanying lesson plan are about the IP concept of designs. Everyday all of us use products and objects of various types which have certain appearance for e.g. aesthetic reasons, functional purposes or ergonomics. What is not widely known is that the designs of products or objects is also an IP asset with rights and therefore can be protected by law. This module also encompasses educational activities on the subject of educational robotics and space exploration as both of them usually attract the interest of school students.

After completing this module, you will be able to:

- understand what designs are and whether they are an important concept of IP.
- get better understanding of its importance in industry and commerce.
- combine the concept of designs with the subject of robotics and in particular of robotic vehicles for space exploration.
- acquire hands on practice on using a 3D CAD software tool to design.

Estimated seat time: about 90 minutes or equivalent of two standard classroom hours are needed to complete this module in a classroom of 20-25 students.

1.2 Main Content

1.2.1 Terms and Definitions

Designs

A formal definition of the term, its purpose and use as given by the World Intellectual Property Organization and the European Union Intellectual Property Office is the following: A design is the IP right that covers the appearance of a product. In its legal definition, it is the outward or visible appearance of the whole or parts of the product resulting from its features. These features can be lines, colours, shapes, textures, contours, materials or ornamentation. This very broad definition covers almost any creation with visible aspects. The following can be protected as designs:

- any industrial or handicraft item or product
- packaging
- graphic symbols
- parts assembled into a complex product
- drawings and art work

A product does not have to be produced on an industrial scale or have artistic value in order for it to be a design.

A design needs to be registered in order to get full protection. Designs may be registered:

- at country level through national IP offices.
- at European Union level as a Community design that covers all EU Member States automatically with one single registration via the European Union Intellectual Property Office (EUIPO)
- through an international application at the World Intellectual Property Organization (WIPO).

In the European Union, the initial period of protection is five years from the date of filing the application. Protection can be renewed for additional periods of five years each, up to a maximum of 25 years.

The success and importance of a design is in its appeal to the prospective customers and users. They are often attracted by novel and creative designs therefore the design of a product can become a key element in a company's effort to make its products more attractive for commercial success. Industrial designs can have a very high commercial value as they provide to companies competitive advantages in the market by creating a new look for their products.

In order for the appearance of a product to be eligible for protection as a design in Europe, it has to fulfil two main requirements:

Novelty: A design is considered to be new if no identical design has been made available to the public before the date of filing the application.

Individual character: The design must give a different overall impression from any other design disclosed earlier.

The followings are excluded from design protection:

- designs that are contrary to public policy or morality, e.g. racist or immoral messages and images
- official symbols or emblems such as national flags
- parts of complex products that are not visible
- computer programmes, though these may be protected by copyrights and patents

The main advantages of registering a designs are:

- the official title, that proves the existence and ownership of the design.
- exclusivity, i.e. the rights that gives the owner of the design the exclusive right to use it.
- protection, the owner of a registered design may prevent third parties from using the protected design in different forms.

Robotic vehicles or rovers

In general robotic vehicles are machines that can move, autonomously or remotely operated, on the ground, in the air, at or under the sea, or in space. Vehicles of this type are also called unmanned as no humans are on board. Usually they are equipped with sensors and computational units to guide and control their motion. Robotic vehicles are designed to be capable of traveling where people cannot go due to distance, difficulty, environmental conditions, or danger. Space exploration is one of the fields that combines simultaneously all these challenges. In this respect, using robotic vehicles for exploration of other planets or celestial objects is the only way and a fundamental step before human exploration is possible that provides enormous scientific and technological rewards enhancing our knowledge.

A concise definition of the term is also given in the Wikipedia – The Free Encyclopedia as: a space rover or planetary rover is a planetary surface exploration device designed to move across the solid surface on a planet or other planetary celestial bodies. Rovers are designed to have partial or fully autonomous functionalities and motion. Rovers are typically created to land on another planet via a lander spacecraft and their task is to collect information about the terrain or upper crust, and to collect and analyze samples such as gas, dust, soil, rocks, and even liquids.

1.2.2 Practical examples

Some representative examples of robotic vehicles – space rovers are shown below.



This space-rover was designed for man...
yankodesign.com



Perseverance rover marks 100th Mars day on the ...
space.com



NASA keeps sending rovers to Mars, and t...
cnet.com



MODA – Online Summer Camp...
museumofdesign.org

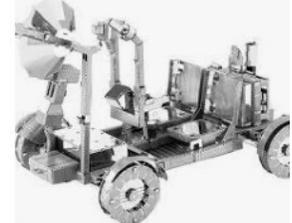
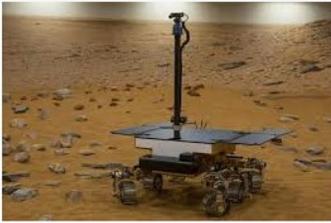


Image 1: Examples of robotic vehicles for space missions

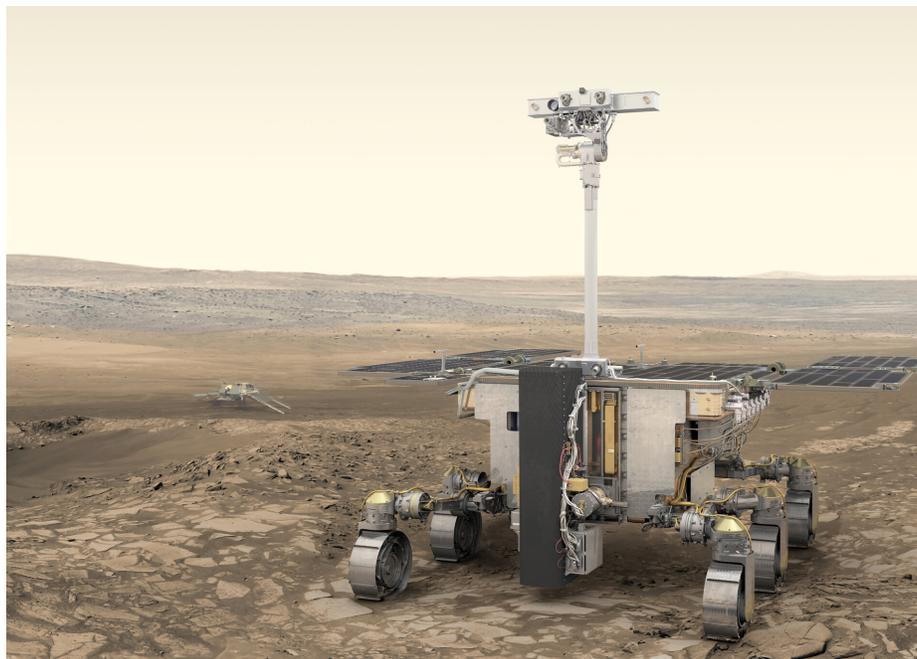


Image 2: General view of the ExoMars rover of ESA (European Space Agency)

Source: https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/Exploration/ExoMars/ExoMars_2022_rover



Image 3: General view of the Mars Curiosity Rover of NASA

Source: <https://mars.nasa.gov/msl/mission/overview/>

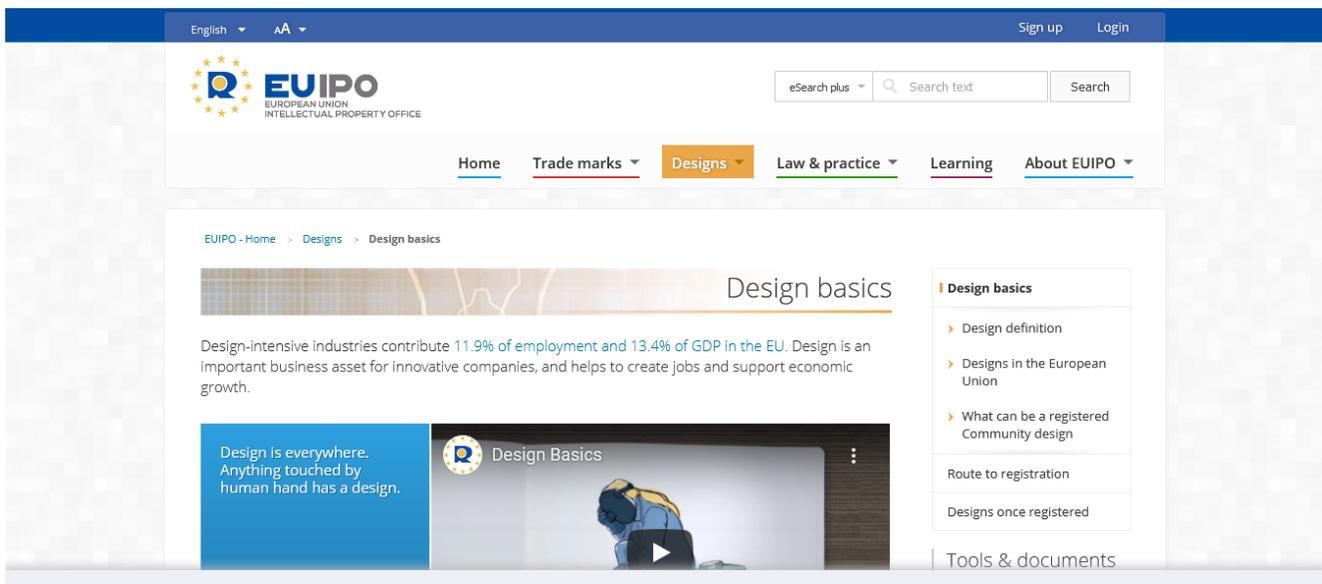


Image 4: Resources of the European Union Intellectual Property Office about designs

Source: EUIPO (<https://euipo.europa.eu/ohimportal/en/design-basics>)

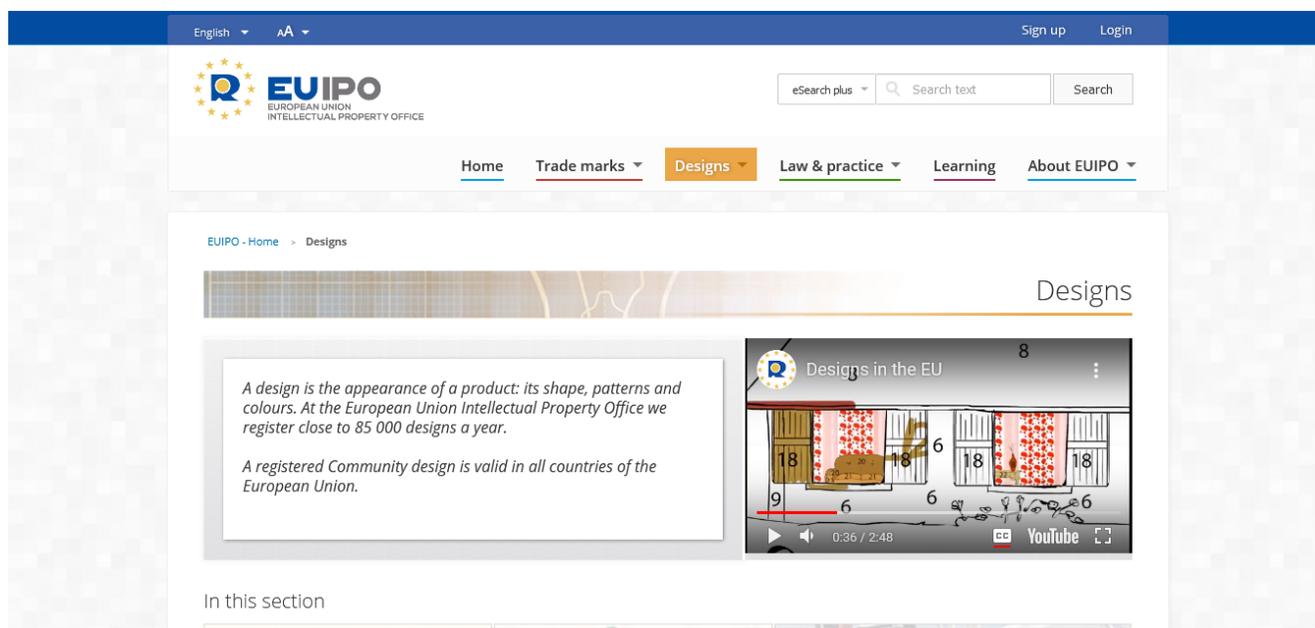


Image 5: Short information video of the European Union Intellectual Property Office about designs and how to register them

Source: EUIPO (<https://euipo.europa.eu/ohimportal/en/designs>)

1.2.3 Case studies

In the lesson plan that accompanies this module the main case that students work on is first to try themselves to design a toy rover using a 3D CAD software tool (Autodesk Tinkercad <https://www.tinkercad.com/>) and then explore how they can register their designs through the fast-track registration service of the European Union Intellectual Property Office (at <https://euipo.europa.eu/ohimportal/en/rcd-route-to-registration>).

A follow-up case study could be students to search for already registered designs. They may be free to choose to search for designs which are related to objects or products they are interested in most. To do this they can access dedicated online search portals like the one of of the European Union Intellectual Property Office <https://euipo.europa.eu/ohimportal/en/rcd-search-availability>

1.3 Knowledge Assessment

The following list of questions can be used to check the learners' knowledge acquisition. Correct answers are marked in bold.

Question 1:

Designs are types of IP [False] **[True]**

Question 2:

Registered designs are protected by European law for maximum of 25 years [False] **[True]**

Question 3:

A design is a valuable business asset of companies **[True]** [False]

Question 4:

A design cannot be sold or bought by a company/creator [True] **[False]**

Question 5:

A national flag can be a registered design [True] **[False]**

Question 6:

A registered design never expires [True] **[False]**

Question 7:

In Europe, a design must fulfill the following requirements to be registered:
[Novelty] [Individual character] **[All of the above]**

Question 8:

A registered design can be freely used by a company/individual/organization other than the creator/owner [True] **[False]**

Question 9:

Designs cannot provide a competitive advantage to a company's product [True] **[False]**

Question 10:

An offensive drawing or racist message can be registered designs [True] **[False]**

1.4 Skills Assessment

An exercise or homework project assignment that promotes problem solving and critical thinking related to the concept of designs can be as follows: students imagine an extraterrestrial colony of the future with residential and public buildings, vehicles etc. They

can sketch it in a drawing or search the internet to find relevant visualizations. Their task is also to identify or propose which of the objects depicted can be registered designs.

1.5 References or additional resources

World Intellectual Property Organization (WIPO)

<https://www.wipo.int/about-ip/en/>

<https://www.wipo.int/designs/en/>

European Union Intellectual Property Office (EUIPO)

<https://euipo.europa.eu/ohimportal/en>

<https://euipo.europa.eu/ohimportal/en/design-basics>

<https://euipo.europa.eu/ohimportal/en/rcd-route-to-registration>

Greek Copyright School Project of the Hellenic Copyright Organization (HCO)

<https://copyrightschool.gr/index.php/en/teachers>

Autodesk Tinkercad

<https://www.tinkercad.com/>

NASA's Mars Curiosity Rover

<https://mars.nasa.gov/msl/mission/overview/>

ESA's ExoMars rover

https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/Exploration/ExoMars/ExoMars_2022_rover