

**Project Innovation-Collaboration (PIC)
2021 – 2022**

Accessibility of the Frogans technology



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Introduction

This document presents the educational cooperation set up between OP3FT China and the École Centrale de Pékin by means of the “Project-Innovation-Collaboration” (PIC) proposed by OP3FT China for the 2021-2022 academic year and taken up by the École Centrale de Pékin.

It also presents, in the appendix, the history of the cooperation in education between the École Centrale de Pékin and the OP3FT through the PIC projects run each year since 2018.

1. Context

1.1 École Centrale de Pékin

The École Centrale de Pékin (<http://ecpkn.buaa.edu.cn/>) was created by Beihang University (Beijing University of Aeronautics and Astronautics) in partnership with the French Écoles Centrale Group (comprising the Écoles Centrales of Paris, Lyon, Nantes Lille, and Marseilles), with the support of the Chinese and French Ministries of Education. It is an international engineering graduate school for educating high-level general engineers, by associating the French educational system and model of training engineers with Beihang's teaching experience in the fields of aeronautics, astronautics, and computing .

1.2 The Project-Innovation-Collaboration (PIC)

The Project-Innovation-Collaboration (PIC) is a project activity open to students in their first year of the Masters program at the École Centrale de Pékin. The PIC gives students an opportunity to apply what they have learned by solving scientific and technological problems in real-life professional situations.

Each PIC is carried out by a team of about 5 students and represents a workload of around 50 man-days.

The PIC is led by two people:

- The project coach represents the business partner, responsible for follow-up, for tutoring and for evaluating the project
- The scientific referent is a professor from the École Centrale de Pékin, responsible for giving scientific or organizational advice and for coordination assistance

1.3 Frogans

Frogans (<https://frogans.org/>) is a new medium for publishing content and services on the Internet in the form of Frogans sites, which users browse using dedicated software called Frogans Player. Frogans as a medium is rooted in a philosophy where typical end users (who have very limited technical knowledge) should no longer be dominated by the technology they are using, and where their interests should always take center stage.

1.4 OP3FT China and the OP3FT

OP3FT China¹ (<https://china.op3ft.org/>) is the local branch of the OP3FT in China. OP3FT China is based in Beijing.

The OP3FT (<https://op3ft.org/>) is a dedicated, independent, non-profit standards developing organization whose purpose is to hold, promote, protect and ensure the progress of the Frogans technology in the form of an open standard for the Internet, available to all, free of charge.

More generally, the OP3FT's purpose is to contribute to the development of a secure and stable Internet that is open to innovation.

2. PIC 2021-2022 concerning Frogans technology accessibility

2.1 Presentation of the project

In 2021-2022, students at the École Centrale de Pékin worked on accessibility of the Frogans technology for people with disabilities. Students were in two groups:

- one group worked on accessibility of the Frogans technology **from the point of view of end users**. In other words, what can be done to help people with disabilities to easily access content published on Frogans sites?
- one group worked on accessibility of the Frogans technology **from the point of view of publishers of content and services**. In other words, what can be done to help publishers so that their content on Frogans sites is more accessible?

The work of each group was divided into three parts:

1. a study of the current situation with regard to accessibility on the Web
2. an analysis of strong points and of areas for improving the Frogans technology with regard to accessibility
3. recommendations for improving accessibility of the Frogans technology

2.2 What the students did

The documents drawn up by the students covered the following aspects.

Contextual Information

- Types of disabilities

¹ In Chinese 北京奥比睿网络技术有限公司

- Situation with regard to accessibility on the Web and work carried out by the W3C² in this domain
- Interviews with people with disabilities to learn how they use the Web and to record their first impressions of their experience concerning Frogans
- Interviews with content publishers concerning their practices with regard to accessibility on the Web
- Focused study on the situation with regard to accessibility on the Internet in China
- Description of the main tools that can be used to measure the degree of accessibility of a Web site

Analysis of strengths / areas for improvement for the Frogans technology

- analysis of strengths and of areas for improvement from the point of view of publishers of content and services
- analysis of strengths and of areas for improvement from the point of view of Internet users.

Recommendations

- Drafting of a document “Accessibility guidelines for Frogans Site Publishers”
- Recommendations for evolution of the FSDL³ language so as to improve accessibility of the Frogans technology
- Recommendations concerning the use of dedicated third-party accessibility tools to complement the Frogans Player software
- Recommendations for evolution of the Frogans Player software

3. Results obtained

3.1 Gains for the Frogans technology

The students’ work is a good survey of the situation as of May 2022 with regard to accessibility of content published on the Internet (that is to say, on the Web, because at that time Frogans was not available for the general public).

Their work also highlights the main strong points and the areas for improving the Frogans technology with regard to accessibility, as it stood in May 2022.

Finally, the students’ recommendations will provide the OP3FT with a very useful source of information for research and development of future evolution of Frogans technology, in order to increase accessibility for people with disabilities. This is in compliance with article 5 of the Bylaws of the OP3FT⁴, which states, with regard to the experience of browsing Frogans sites: “the OP3FT shall strive to make this browsing experience accessible to people with disabilities”.

2 World Wide Web Consortium, the standards developing organization in charge of the World Wide Web, <https://w3.org/>

3 The language used for developing Frogans sites. See <https://www.frogans.org/en/resources/fsdl/access.html>

4 <https://www.op3ft.org/en/resources/bylaws/access.html>

3.2 Cooperation between the École Centrale de Pékin and OP3FT China

The PIC project carried out in 2021 – 2022 bolstered the cooperation between the École Centrale de Pékin and OP3FT China, in the continuity of PIC projects jointly led by the École Centrale de Pékin, the OP3FT and OP3FT China since 2018 (see Appendix). This long-term cooperation has provided opportunities for several cohorts of students at the École Centrale de Pékin to work on innovative technological subjects.

Encouraged by these five years of rewarding cooperation, the École Centrale de Pékin, the OP3FT and OP3FT China intend to pursue their cooperation, for example in the form of new PIC projects, teaching sessions or internships.

Appendix – History of the relationship between the OP3FT, OP3FT China and the École Centrale de Pékin

PIC Projects

Since 2018, five PIC projects have been proposed by the OP3FT and then (once it was set up) by its local branch OP3FT China, and were taken up by the École Centrale de Pékin and its students:

PIC no.	Academic Year	Project proposer	Subject (title)	Educational sheet (in English)	Number of participating students
1	2018-2019	OP3FT	<i>Designing advanced human-computer interaction using a new technology</i>	https://china.op3ft.org/en/resources/Frogans_Projet_PIC_Centrale_Pekin_20180910_EN.pdf	5
2	2019-2020	OP3FT	<i>Designing an ingenious online assistant using Frogans as a medium</i>	https://china.op3ft.org/en/resources/Frogans_Projet_PIC_Centrale_Pekin_20190911_EN.pdf	5
3	2020-2021	OP3FT China	<i>Using Frogans as a medium, design a virtual cross-cultural trainer helping Western organizations get acquainted with Chinese business communication practices</i>	https://china.op3ft.org/en/resources/Frogans_Projet_PIC_Centrale_Pekin_20200910_EN.pdf	5
4	2021-2022	OP3FT China	<i>Making Frogans as a medium more accessible to people with disabilities Part A: access to content</i>	https://china.op3ft.org/en/resources/Frogans_Projet_PIC_Centrale_Pekin_A_20210929_EN.pdf	5
5	2021-2022	OP3FT China	<i>Making Frogans as a medium more accessible to people with disabilities Part B: publication of content</i>	https://china.op3ft.org/en/resources/Frogans_Projet_PIC_Centrale_Pekin_B_20210929_EN.pdf	6

On-campus workshop

As part of PIC no. 2, the OP3FT organized a workshop on the campus of the École Centrale de Pékin to train students in the OP3FT methodology entitled UADD (*Uniform Asymmetric Dialog Description*)⁵.

Internships

The OP3FT also took part in the Job Fair organized by the École Centrale de Pékin in November 2019.

Six internships have been taken up, in France and in China, by students of the École Centrale de Pékin at the OP3FT and at OP3FT China since 2019.

5 https://www.frogans.org/en/resources/presentations/Ecpkn-OP3FT-UADD-Overview-fr-20191123_fr.pdf