

# Call for Proposals – Fintech Use Cases 2021

Course on Financial Technologies and Central Banking, second edition

## Introduction

In November 2019, the first edition of the Course on Financial Technologies and Central Banking was held at CEMLA. In this course, attendees were introduced to the new technologies that are currently being developed and used to address central banking problems. Additionally, use cases developed within the regional Innovation Hub, a CEMLA initiative launched in 2019, were presented. With the academic support of University College London, central banks developed projects to address policy and operational issues by implementing new technologies. It is worth mentioning that, in addition to developing central banks' capacities, another objective was to publish an academic paper that presents the methodologies and results obtained for each use case.

The issues addressed by the central banks from Bolivia, Chile, Colombia, Ecuador, El Salvador, Peru and Uruguay included: measurement of levels of exposure to systemic risk, structural characterization of the interbank market, price rigidity, anomalous payments detection, Real Time Gross Settlement Systems (RTGS) design using Distributed Ledger Technology (DLT).

Thanks to the interest and effort put in by the jurisdictions, with the aim of continuing studying issues related to financial technologies and to develop tools that may be of use to central banks, **CEMLA calls for proposals on fintech use cases to be developed during 2021 and 2022.**

## Application

Proposals should be sent by central bank officials (hereinafter: technical team) to be analyzed and selected by University College London – UCL experts' (hereinafter: academic team). CEMLA will assist the development of all selected use cases.

Once proposals are accepted the academic team will accompany the technical team to design the approach and methodologies to be used for the development of the use case. Preparatory work of the selected cases is expected to occur once technical teams are informed about the outcome of their application, and before the second edition of the Course on Financial Technologies and Central Banking. The work developed will be presented and discussed during this event.

## Requirements for the proposals

The academic team welcomes a variety of projects either addressing current regulatory and central banking functioning challenges, or exploring new challenges and datasets:

- i. Task-oriented projects: Projects with a specific regulatory question or task that the technical team wishes to address. For that end, the academic team requests a list of expected indications related to:<sup>1</sup>
  - What is the goal of the exercise?
  - What are the quantities that will be measured?
  - What is the data you plan to use for the exercise?
- ii. Exploration-oriented projects: Projects where there is no specific question, but it is desirable to explore the potential use of available datasets<sup>2</sup>.

For each accepted use case, the technical teams must ensure the datasets availability, and that at least a part of the original dataset, or a simulated one, must be also available for the academic team and for the training sessions of the Course, and for its custody in the Innovation Hub. The technical teams must also nominate one person responsible for the project and guarantee sufficient human resources for its development. This includes data-gathering and preparation.

The topics and methodologies on which academic team has previous experience are the following:

<b>Topic</b>	<b>Methodologies</b>	<b>Use cases examples</b>
Complex Systems Systemic Risk	Complex Networks Principal Component Analysis Random Matrix Theory	Overlapping portfolios Interbank lending Network filtering and validation Credit risk
Big Data Analytics Machine Learning	Probabilistic Modelling Genetic Algorithms Decision Trees Clustering algorithms	Institutions' characterization P2P lending Anomalous behavior
Artificial Intelligence	Neural Networks Support Vector Machines	Payment patterns recognition Anomaly detection

**Dates:**

- **Proposals submission deadline: 31 May 2021**
- **Acceptance of proposals: 30 June 2021**
- **Preparatory work: July 2021**
- **Development period: August – October 2021**
- **Presentation of use cases: 15-19 November 2021**

<sup>1</sup> The academic team will help the technical team finding the best way to tackle the question using the available data. Please note that in some cases the question may not be fully addressed with the available data.

<sup>2</sup> The academic team will help the technical team in characterizing and processing the data and shaping possible questions that can be addressed with available data.

## Call for proposal form

Please fill the following form (up to 100 words per question will be enough) and send it to [smartinez@cemla.org](mailto:smartinez@cemla.org) and [mmorales@cemla.org](mailto:mmorales@cemla.org)

<b>1. What is the regulatory / operational context of the project?</b>
<b>2. What is the specific question you wish to address?</b>
<b>3. What data do you plan to use? * Please also provide a description of the format of the data</b>
<b>4. Please provide the contact details of the person responsible for this project at your central bank</b>  <i>Name and role of the person responsible:</i> <i>Institution:</i> <i>E-mail:</i> <i>Telephone:</i>

\*Note: For all proposed use cases, it is necessary to specify how the data is structured. Data type: for each quantity in your data set, it is necessary to specify whether it is a continuous (double) variable, a discrete (categorical) variable, a Boolean variable, etc. Data format: indicate if it is .csv, .txt, Matlab workspace, etc. Note that data will have to be cleaned before the course (e.g. no missing values).