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**Project Acronym:** BEHAPI  
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**Title of Deliverable:** Suite of training exercises w/ solutions  
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**Abstract:**

This deliverable presents the training materials on behavioural types developed by members of the consortium during the second year of the project. These materials were created to support the courses of the summer school and the boot camp that took place in July 2019.

Complete information on the event and links to the relevant material is available from the project website.

<https://www.um.edu.mt/projects/behapi/leicester-summer-school-behavioural-approaches-for-api-economy-with-applications/>



# 1. Introduction

The school offered courses from academia and industry. Many of these were supported by practical hands-on sessions with state-of-the-art tools and technology. The school also hosted a bootcamp where companies participating in the project showcased their approaches to API development with hands-on sessions.

The material used by the lectures and presenters is available from <https://www.um.edu.mt/projects/behapi/leicester-summer-school-behavioural-approaches-for-api-economy-with-applications/courses-behavioural-approaches-for-api-economy-with-applications/>

# 2. Courses

The topics were about models, languages, and tools to support reasoning about and to develop correct API-based software.

Five of the seven academic lecturers were members of the project.

[Gul Agha \(U. of Illinois at Urbana-Champaign\)](#) gave a course on Temporal Coordination of Actors: Specification, Inference and Enforcement of Mechanisms.

[Ornela Dardha \(U. of Glasgow\)](#) gave a course on Introduction to Session Types.

[Diego Garbervetsky \(U. of Buenos Aires\)](#) gave a course on Using behavioral abstractions for testing and validating classes.

[Ivan Lanese \(U. of Bologna\)](#) gave a course on Choreographic Programming of Adaptive Applications.

[Gianluigi Zavattaro \(U. of Bologna\)](#) gave a course on The impact of asynchronous communication on the theory of contracts and session types.



We also had two academic lecturers from colleagues not involved in the project, allowing the participants to know about state-of-the-art work being developed outside the project and to disseminate our work to these members of our community.

[Karoliina Lehtinen \(U. of Liverpool\)](#) gave a course on Foundations of runtime verification.

[Rumyana Neykova \(Brunel University London\)](#) gave a course on Session Types meet Type Providers: Compile-time Generation of Protocol APIs.

### 3. Bootcamp

Three of the companies participating on the project presented relevant tools and products.

[Leonardo Frittelli](#) and [Facundo Maldonado](#) (McAfee) presented STIX 2.0 model and Patterns: Applying API economy to cybersecurity.

[Jan Pustelnik \(Actyx\)](#) presented an industrial use case on Uncompromisingly Available Agents.

[Hugo Andrés Lopez \(DCR Solutions\)](#) presented an approach on Business Process Regulatory Compliance.

[Andres More](#) and [Damian Quiroga](#) (McAfee) presented Security Connected Solutions using Open APIs (OpenDXL).