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# Agenda

- **Introduction to the SmartCLIDE vision for a cloud based IDE**

- **Introduction to the SmartCLIDE IDE**
  - **Service Creation and Composition**
  - **Deep Learning Engine**

# Agenda Introduction

- **Idea and Concept**
  - Motivation
  - Approach
  - Target Users & Value

- **SmartCLIDE Pilots**

- **Features**
  - What is SmartCLIDE?
    - Discovery of Services
    - Composition of new Services
  - Features Map
  - Whole Life cycle Support IDE

- **Roadmap**

# Facts

- **Project Title**
  - Smart Cloud Integrated Development Environment supporting the full-stack implementation, composition and deployment of data-centered services and applications in the cloud
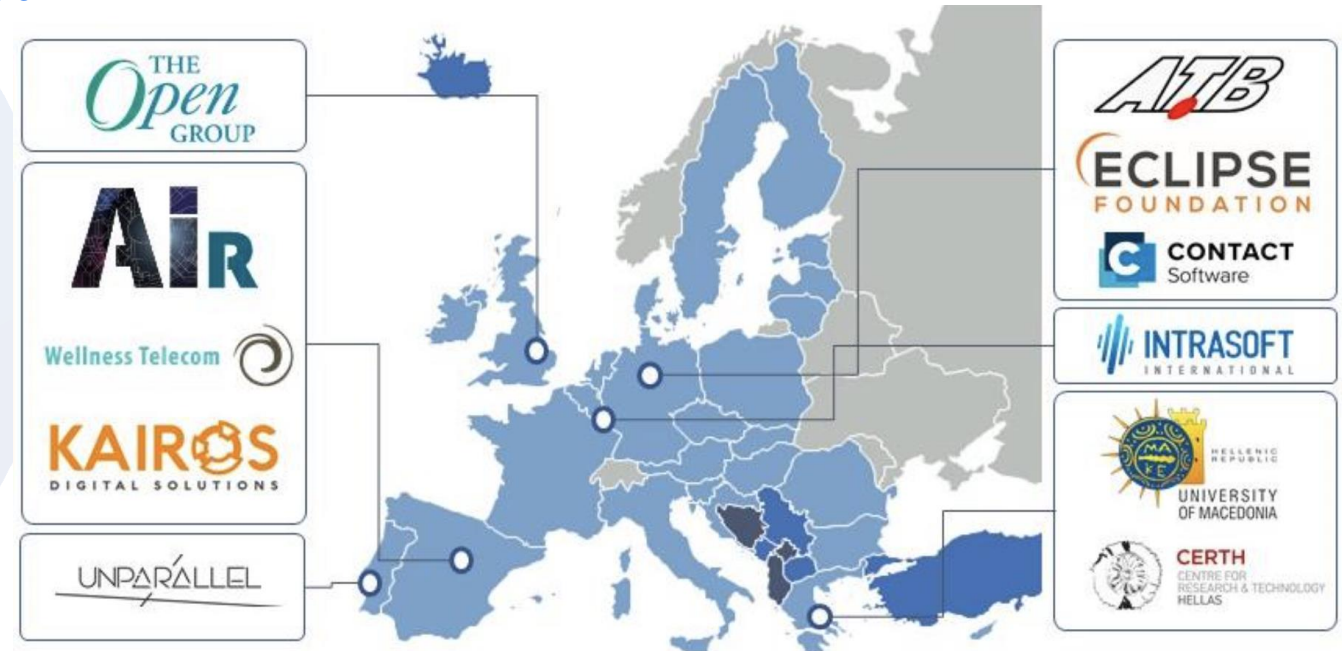
- **Duration**
  - 01.2020 – 12.2022

- **EC Contribution**
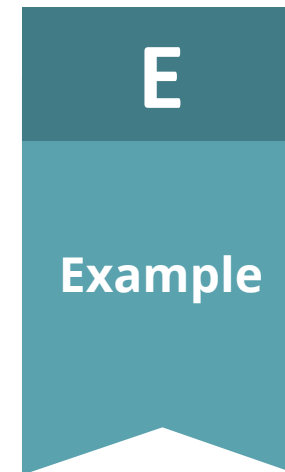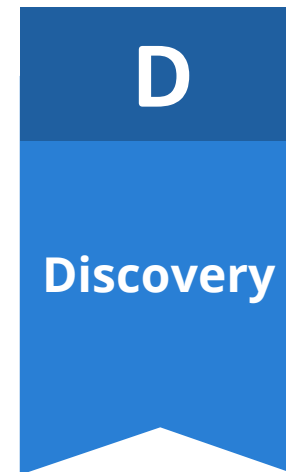  - €4,935,381
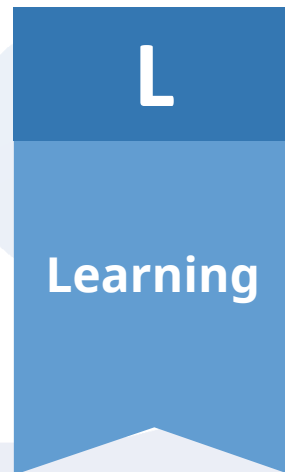
- **Programme**
  - H2020-ICT-2019-2

- **Further information**
  - smartclide.eu

# What's all this about?

# S M A R T

| C | L | I | D | E |
|---|---|---|---|---|
| **Cloud** | **Learning** | **IDE** | **Discovery** | **Example** |
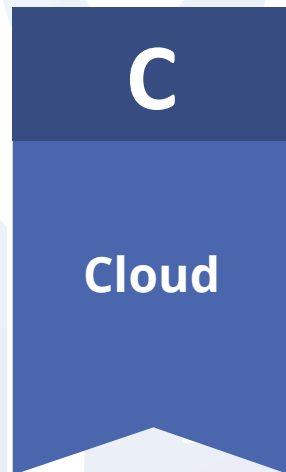
# SmartCLIDE Motivation

**Digital transformation** is changing every sphere of society at a very fast pace.

Technological and cultural breakthroughs.

**Cloud computing** and **agile methodologies** as the key enablers of digital transformation.

SmartCLIDE aims to **boost** the adoption of **Cloud solutions.**

**SmartCLIDE** → **Cloud Computing** → **DIGITAL TRANSFORMATION**

# SmartCLIDE Approach

| Main Objective |
|:---:|
| **Boost the adoption of Cloud Solutions** |

| | Limitations | Aims |
|:---:|:---|:---|
| **01** | Creating solutions from scratch is **time consuming, complex** and **expensive**. | **Faster and more effective development** of cloud services<br><br>Deeper **insights** on how cloud and code works |
| **02** | Composition of services is limited due to non-uniform classification and documentation, and a QoS and Security compromise | More secure and easy way to reuse quality code<br><br>Gaining trust and facilitating the reuse of services |
| **03** | Predict and control costs is very difficult using **pricing models** of public cloud providers | To be a code learning tool<br><br>Deeper understanding on the costs of cloud |

# SmartCLIDE Target Users & Value
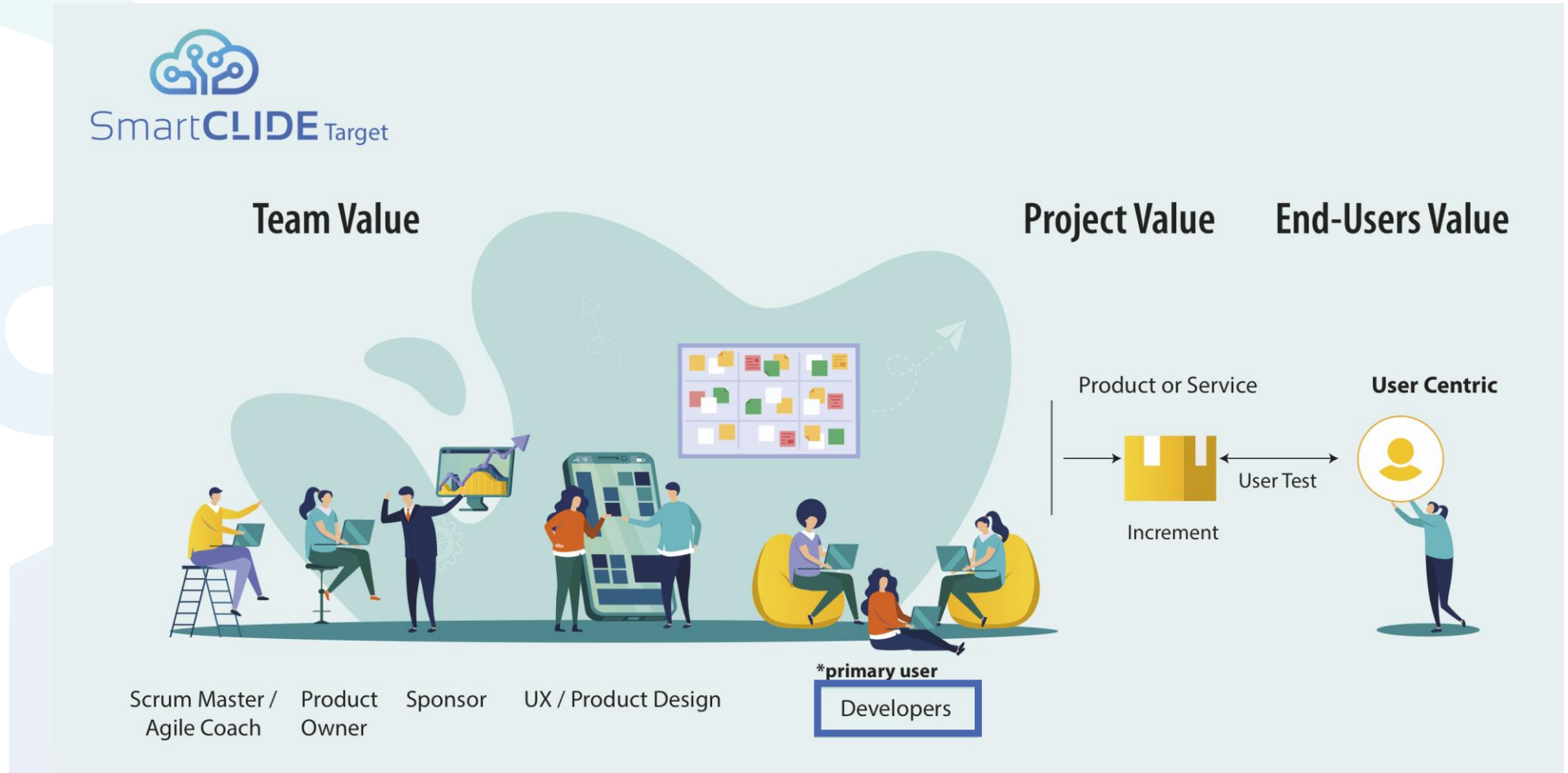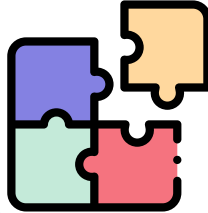
# Pilots

- **Driven by 4 Pilots**

| Pilot 1:<br>Platforms for Social Security Organisation | Pilot 2:<br>IoT Catalogue |
|---|---|
| Pilot 3:<br>Real-Time Communication Platforms | Pilot 4:<br>PDM/PLM/ALM Platforms |

# What is SmartCLIDE

**Cloud IDE**
- Smart, cloud-native IDE
- Collaboration between different stakeholders

**Services Composition:**
- Create control, data and operations abstractions
- Combine abstractions to create new services

**Services Discovery**
- Import/Search and Discover available services and resources (abstractions, data sources, infrastructure resources, data transformations, etc.) from their current IaaS, PaaS and SaaS Providers

**Deep Learning**
- Automatic Software Classification
- Context Identification and Abstractions Selection
- Programmatic Output Generation

# Discovery of Services

- **Automatically exposes available resources and cloud services** (e.g. VM images with different configurations, already implemented containers, business related services…) **from current IaaS, PaaS and SaaS providers, based on:**
  - General Purpose
  - Technical requirements

- **Provides additional information for better re-use of services and decision making in the creation or composition of new services**
  - Description
  - Certifications
  - Other services and applications using the proposed service
  - Opinions from other end-users
  - Comparison with other similar services

- **Ontology-based technique to identify cloud service categories**
  - By detecting cloud service concepts from cloud service sources
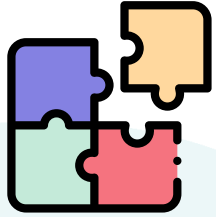
# Composition of new Services

- Rapid implementation of new services either creating them **from scratch** or **by composition**.

- **Create** new services indicating the way the resulting service/ application will be deployed or the features that will be monitored at runtime

**Full life-cycle**

support

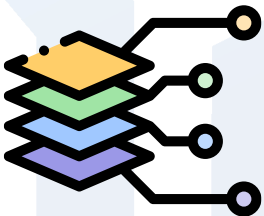**Coding-by-demonstration**

and **text notation**
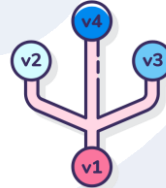
**Comprehensible, reusable**

and **directly testable code**

**High Level Abstractions**
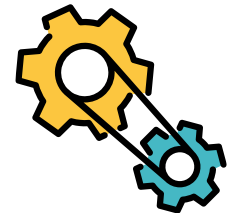
at all stages

**Version Control** and

**Configuration Management Integration**
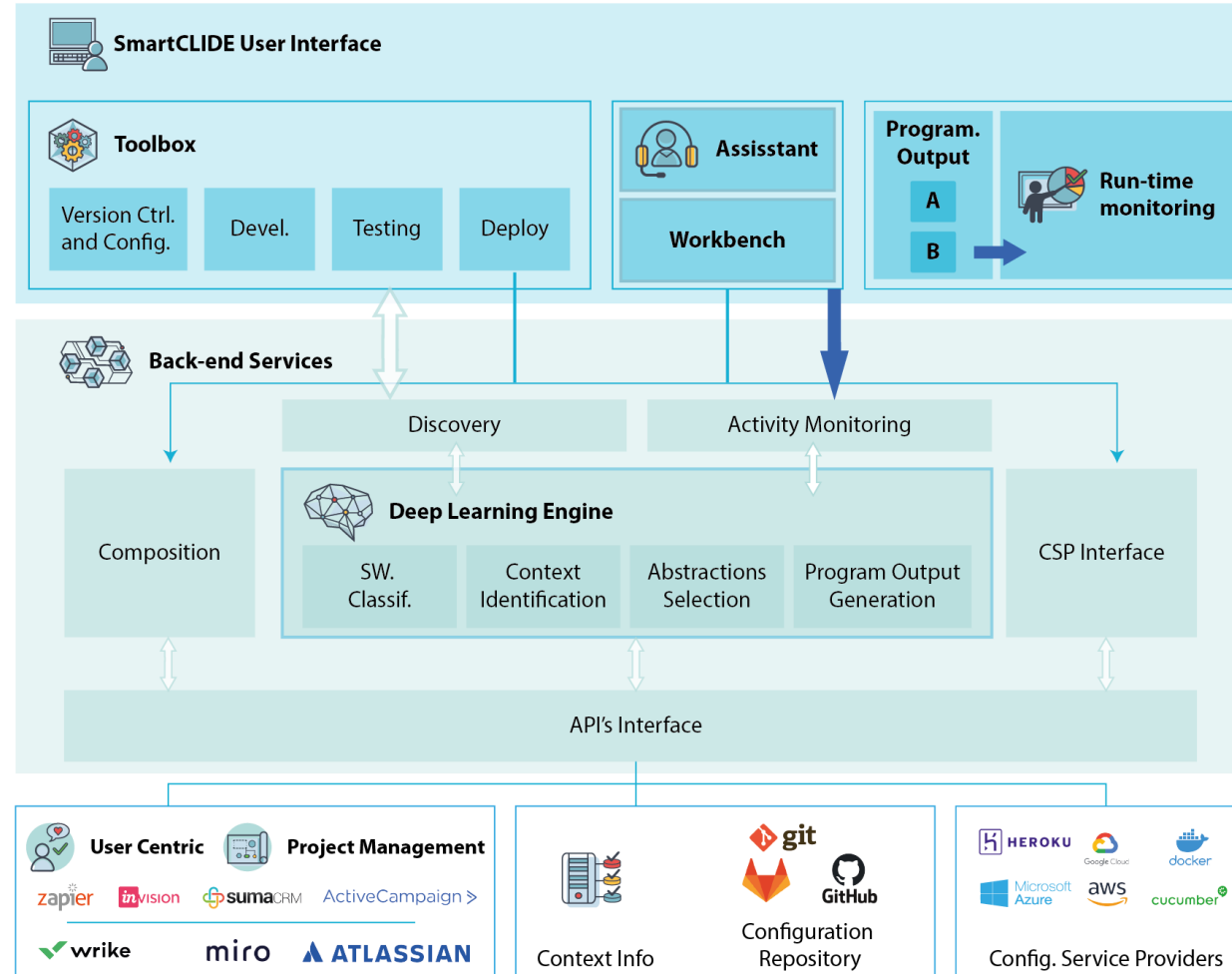
**Insightful** source code **monitoring**

Learnable Programming

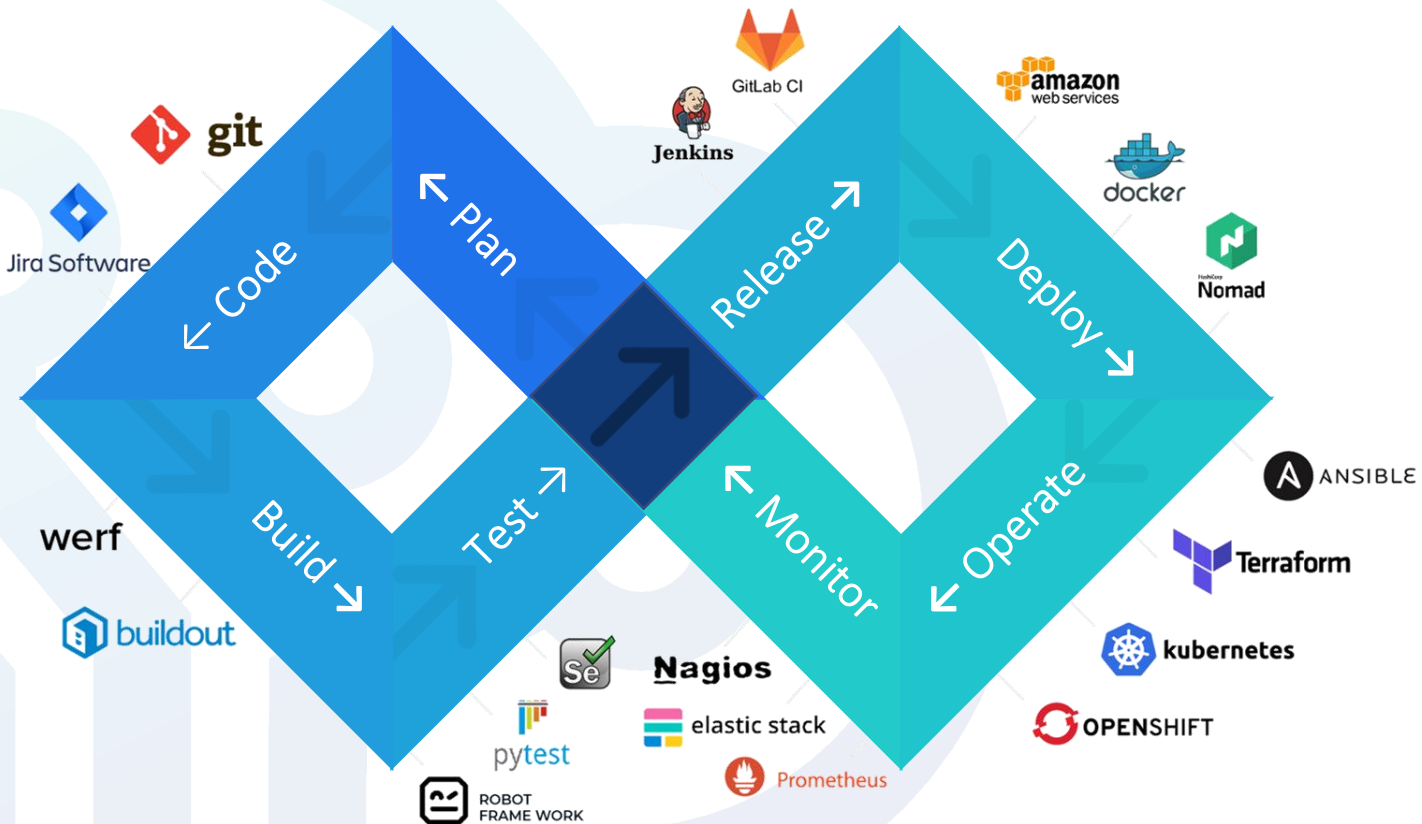**Continuous Integration** and **Deployment** assistance

and **Cost Simulation**

# The SmartCLIDE Features Map
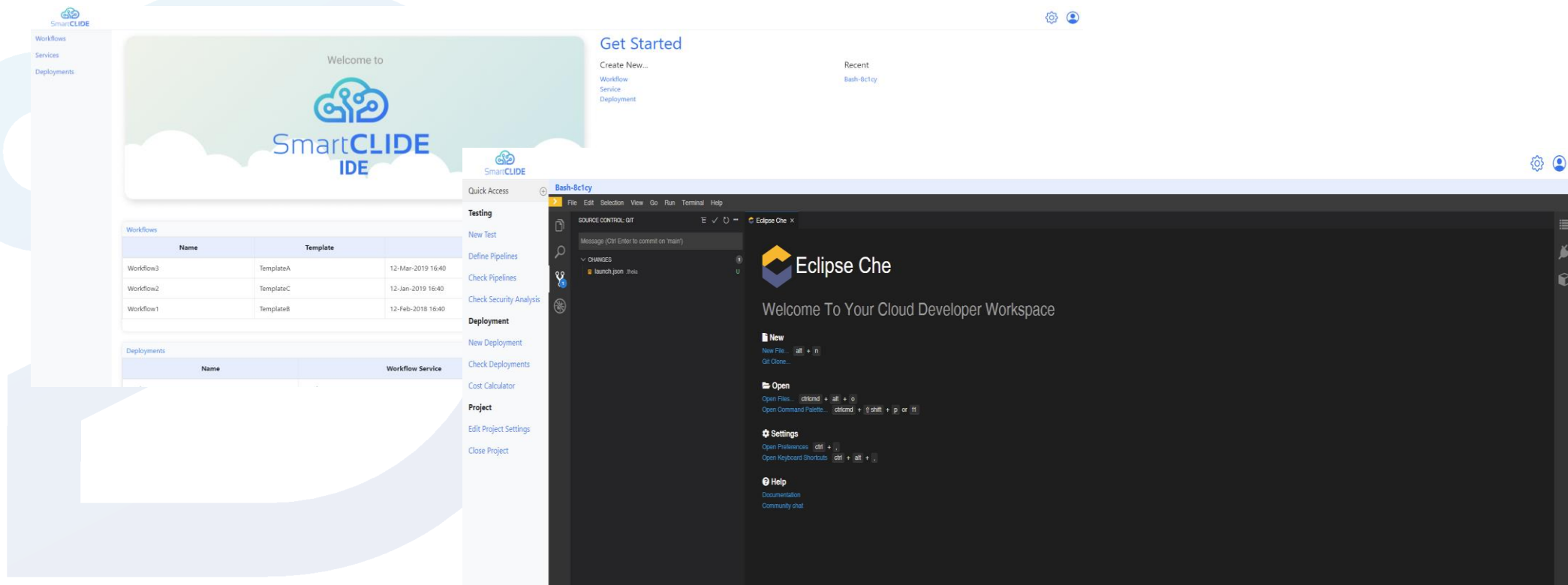
# Whole life cycle support IDE



Integration with build tools for **packaging, virtualization and containerization** tools to handle images of environments and perform fast deployments.

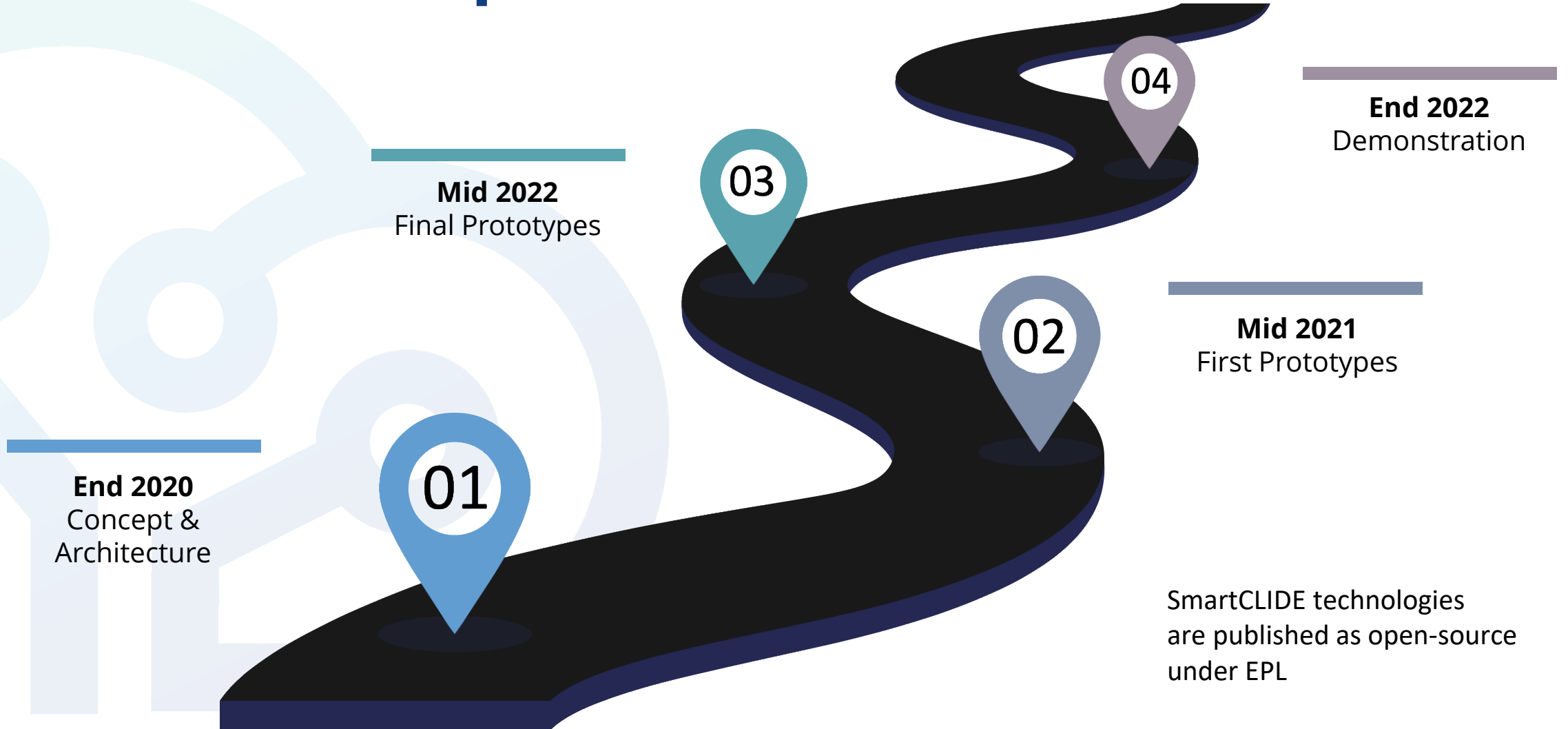**Extreme automatization** concept of DevOps.

Integration of autonomous AI-based Smart Services within the DevOps loops, so end-users will be able to reuse already existing **user stories or acceptance criteria,** when and where more intensive testing will be required (by monitoring the verification stage), or when is the best moment to build and transport an application to a determined environment.

# The SmartCLIDE Frontend

- **Based on Eclipse Che**

# Roadmap

SmartCLIDE

**End 2022**
Demonstration

04

**Mid 2022**
Final Prototypes

03

**Mid 2021**
First Prototypes

02

**End 2020**
Concept &
Architecture

01

SmartCLIDE technologies
are published as open-source
under EPL

# SmartCLIDE
## the Stairway to Cloud

# Thank you !

Join our newsletter: http://smartclide.eu