

## Harnessing the power of data

A distributed data-mining software platform for extreme data across the compute continuum

Extract EU Project Showroom



[Visit our webpage](#)



[Contact us](#)

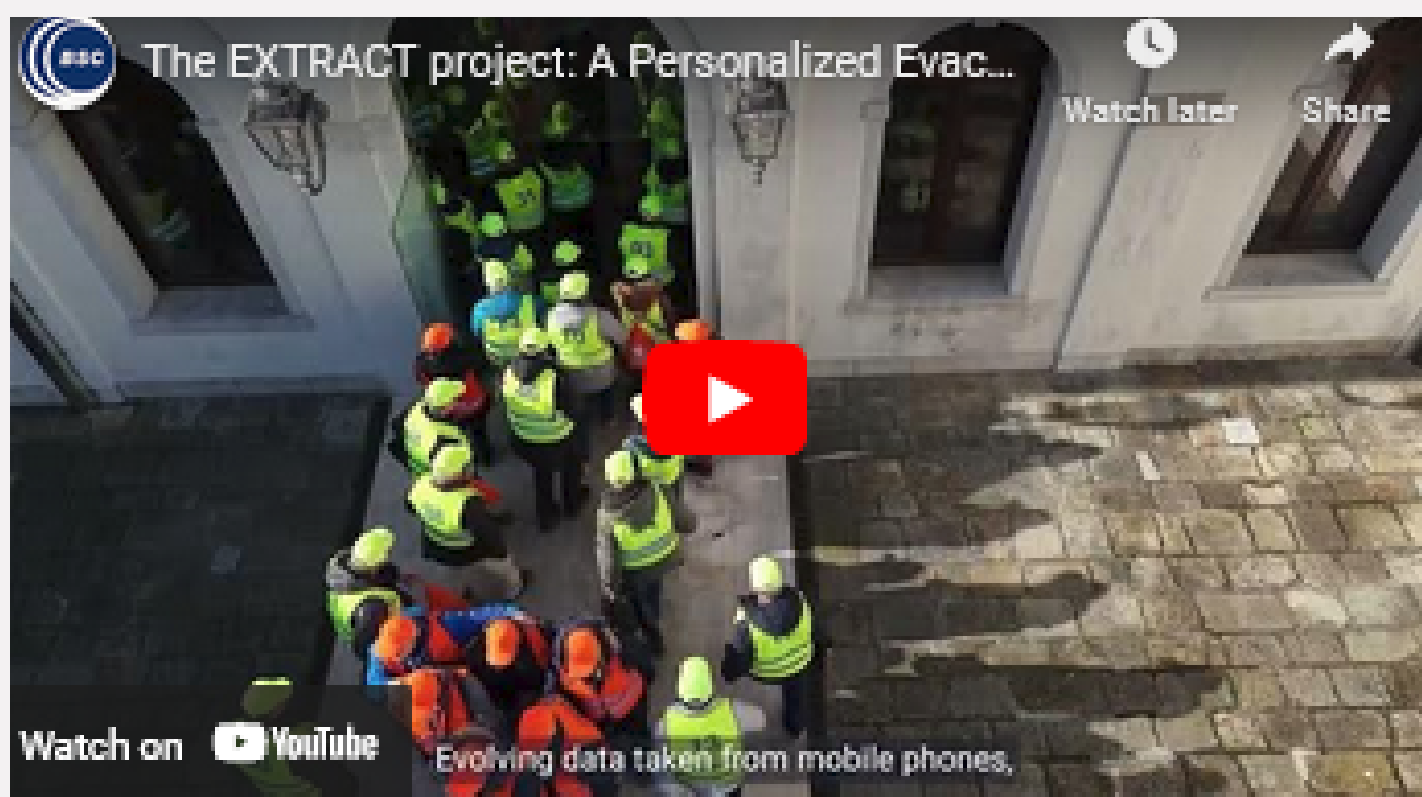
### OUR VISION

EXTRACT will create a complete edge-cloud-HPC continuum by integrating multiple computing technologies into a unified secure compute-continuum. It will do so by considering the entire data lifecycle, including the collection of data across sources, the mining of accurate and useful knowledge and its consumption.

### USE CASES

Validating the platform

#### Personalised Evacuation Route (PER) System for crisis management in Venice, Italy



The EXTRACT platform will be used to develop, deploy and execute a *data-mining workflow* to generate personalized evacuation routes for each citizen, displayed in a mobile phone app. The platform will process and analyse extreme data from Copernicus and Galileo satellite data, IoT sensors, 5G mobile signal, and a semantic data lake fusing all this information.

#### Transient Astrophysics with a Square Kilometer Array Pathfinder (TASKA)



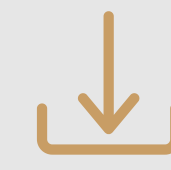
EXTRACT technology will be used to develop data mining workflows that effectively reduce the huge amount of raw data produced by NenuFAR radio-telescopes by a factor of 100. This will allow the populating of high-quality datasets that will be openly accessible to the astronomy community (through the EOSC portal) to be leveraged for multiple research activities.



### LEARN MORE ABOUT THE PROJECT

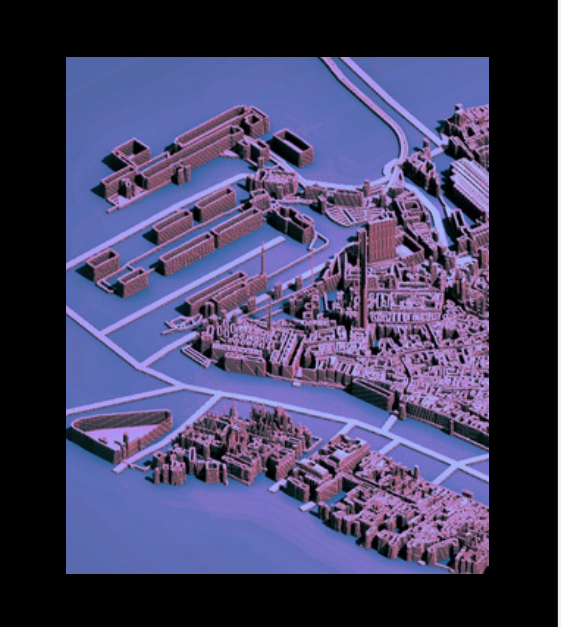


[Download the flyer](#)



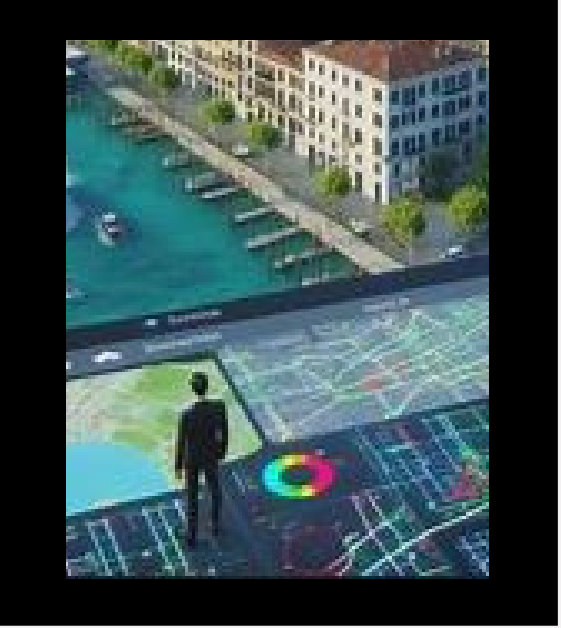
[Download the PPT](#)

### NEWS



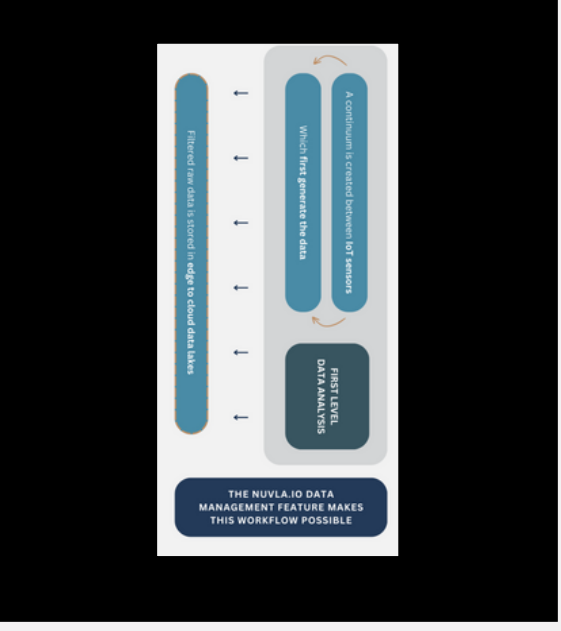
#### Urban Safety and Efficiency: A Digital Twin of Venice

Our pioneering Urban Digital Twin (UDT) in Venice, Italy—a city known for its unique architectural complexity and significant tourist influx-- exemplifies advanced digital twin technology applied in an urban setting.



#### Simulating Movement to Test Learning Strategies in the PER use Case

Simulating possible movements of people in an emergency situation is crucial for properly training the model issued in the PER system and creating a Multi-Agent Reinforcement Learning (MARL) model. A true-to-life simulator offers a safe and controlled platform for testing learning strategies in different situations.



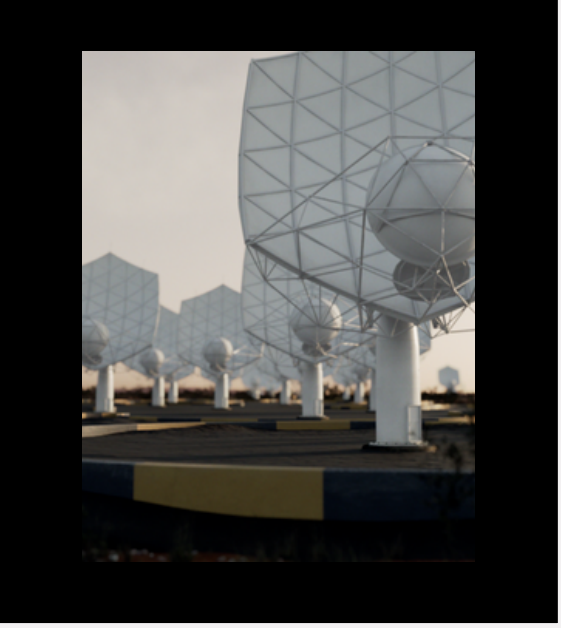
#### Building Edge to Cloud Data Lakes and Warehouses backed by Data Catalogue to Power AI

Objects from data lakes, and soon the time-series from the data warehouses, can be easily found with the Nuvla.io data management feature and retrieved to be processed and analysed by various users at the edge or in the cloud.



#### Serving Models at Scale in EXTRACT

Serverless KServe mode automatically scales each deployed model out or in to meet a certain performance goal. Deploying KServe in this mode allows the efficient use of hardware that matches the specific demand, balancing performance with costs such as energy and infrastructure.



#### Improving the Performance of the TASKA Use Case through Parallelisation

Generating high-resolution images from the data received from the SKA antennas requires integrating the latest cloud technologies in data processing parallelisation. Doing so will help create and improve the workflows used in the TASKA use case.

[More news pieces online](#)

### The EU Cluster Harnessing Extreme Data using Advanced European Technologies



Seven EU projects collaborate around shared mission to extract meaningful insights from extreme data

