

Athena

SENTIENT INNOVATION **HYBRID ECOSYSTEM FOR TERRITORY SAFETY AND SUSTAINABLE DEVELOPMENT**

the project

An **interdisciplinary, social, and economic Project** that encourages the activation and strengthening of cooperative relationships between the economic and social actors of territorial districts with high seismic and hydrogeological vulnerability **for territory safety**, as well as for the definition and provision of **services capable** of also **encouraging the competitive repositioning of institutions and businesses** with a view to sustainable development and positive social impact on the territory.

The *Athena Sentient Innovation Hybrid Ecosystem* consists of a **networks' set** of economic and social actors linked by **symbiotic relationship** in the context of a *holistic territory safety policy*; an **aggregation of Universities, public and private Research Centres, Institutions and Companies** which collaborate in the definition and activation of several *ecosystem services* which characterize a condition of continuous evolution of the Ecosystem;

objectives

Promotion of a **territory regeneration process** of a given district, in the context of a shared and participatory territorial safety policy, which is the **central and driving element of sustainable development**.

operational tools and implementation procedures

The elements that most characterize the operation of the **Athena S.I.H. Ecosystem** with **sensory and cognitive processing** abilities for scenario and impact analyses through **multi-source Big Data**:

- **policies' networks**, in a specific *holistic configuration*:
territory safety, social planning, resilience & sustainability, education;
- Promotion of **innovation ecosystem services for territory safety**.
 - **monitoring of territory elements**; the different typologies:
 - seismic, meteorological, geophysical, hydrogeological, hydraulic environmental and UAV
 - buildings, for detection of collapses in Real Time (RT) after an earthquake;
 - roads, for evaluation of their conditions (RT) after an earthquake;
 - emergency areas, for evaluation of their usability (RT);
 - number of people involved in building collapsed or in flooding of water

- streams (RT);
- *indoor & outdoor escape routes (RT)*;
- seismic precursors by Acoustic Emission (AE), and Night Temperature Gradient (NTG);
- **Big Data**: generation and acquisition, **Data Analytics** and **AI** procedures;
- a powerful **integrated interface dashboard**, to support (RT) the Public Administration in *decision support* for providing *early warning* in the event of natural disasters or critical issues as well as in territory's regeneration process;
- **damage scenario construction**; the different typologies:
 - seismic, hydrogeological and hydraulic

Activities all aimed at defining and promoting a shared and participatory territorial **territory safety policy**, which aims to provide **assistance to public structures in the assessment of territorial critical issues**, both through targeted theses prepared by professionals in higher education courses at Universities and Research Centres, Institutions and Companies involved in the **Athena S.I.H. Ecosystem**, and field experience, in the context of **seismic and hydrogeological prevention policies**;

- Promotion of **Innovation ecosystem services for social planning**

Innovation Lab T-Safety implementation, a **gathering space** where ideas are transformed into projects. A space configured on the interconnection of **public-private partnership networks** to form operational **clusters**, able to integrate with the territory in the management of training, economic and social paths, with the aim of:

- **supporting** the development of **territorial, economic and social dynamics** for the enhancement of the territorial, environmental, cultural, historical, economic and social resources that best characterize the **territorial identity**;
- **defining a territory safety policy**, based on a **multi-objective and inter-sectoral resilience strategy**;
- **motivating** the sharing of a territory safety policy with the support of all economic and social actors, identifying sources of financing, also developing the **endogenous ability to create value**, and **integrating the three dimensions of sustainability: economic, social and environmental**.
- **providing** assistance to public structures in charge of territory safety in the assessment of territory criticalities;

- Promotion of **Innovation ecosystem services for resilience & sustainability**

The definition of a sustainability strategy will be related to the identification of a given territorial area characterized by a **dynamic and multidimensional entity** (institutional, environmental, historical, economic, social, cultural, etc.), in continuous evolution. On such an entity, targeted analyses will be carried out between past, present and future, to enhance and guide choices to achieve significant competitiveness and attractiveness of the territory.

And this to identify the driving and driven elements of the district verifying the actual possibility of integration in an environment with strong connotations of

resilience and sustainability, in order to transform the critical issues of the territory into **driving elements of sustainable development** and to promote **guided processes of territorial regeneration** aimed at **enhancement of resources**;

- Promotion of **innovation ecosystem services for education** .

HENSE SCHOOL, with its complex activities related to a sustainability strategy, outlines a shared and participatory territorial safety policy, promotes a process of improving safety literacy, to be considered, not as the effect of a mere knowledge transfer, but rather, as a fundamental element in which **educational, research and experimental elements**, with a strong interdisciplinary character, **are integrated with institutional, economic and social aspects**.

Higher education paths aimed at creating a "**Network of Safety Professionals**" - to be used in the *Athena S.I.H. Ecosystem* initiatives - and completed by **lifelong training courses** , also for companies and institutions, are referable in fact to the creation of a **pool of skills at the service of the community**, which will be constantly updated.

impact on the territory

The territory safety policy becomes the driving force for the adoption of **development models of territorial systems** that encourage effective **interaction between economic and social actors for the production and transfer of knowledge**; an action where the **different roles of public institutions and universities, are integrated** for the promotion of **innovative solutions and services** in the sector of territory safety, expression of operation and of an unprecedented proactive territory management policy aimed at:

- creation of a supra-municipal network for the implementation of a **shared and participatory territory safety policy**, a prerequisite for sustainable development;
- creation of a business support structure for **competitive repositioning in the respective market segments**;
- promotion of **strategic territorial planning**, and contextual definition of operational levels and tools, as well as decision-making methodologies;

The activation and **testing of the Athena S.I.H. Ecosystem** on some significant territorial districts, located in different Regions, characterized by different levels of vulnerability of the territory, different socio-economic conditions and levels of entrepreneurship, including technological ones, will provide a significant opportunity to evaluate its effectiveness and efficiency on a national scale, in the context of a **social dimension of resilience and entrepreneurship**, with the aim of transforming a territory safety policy from domain of public spending in the central and driving force of sustainable economic development.