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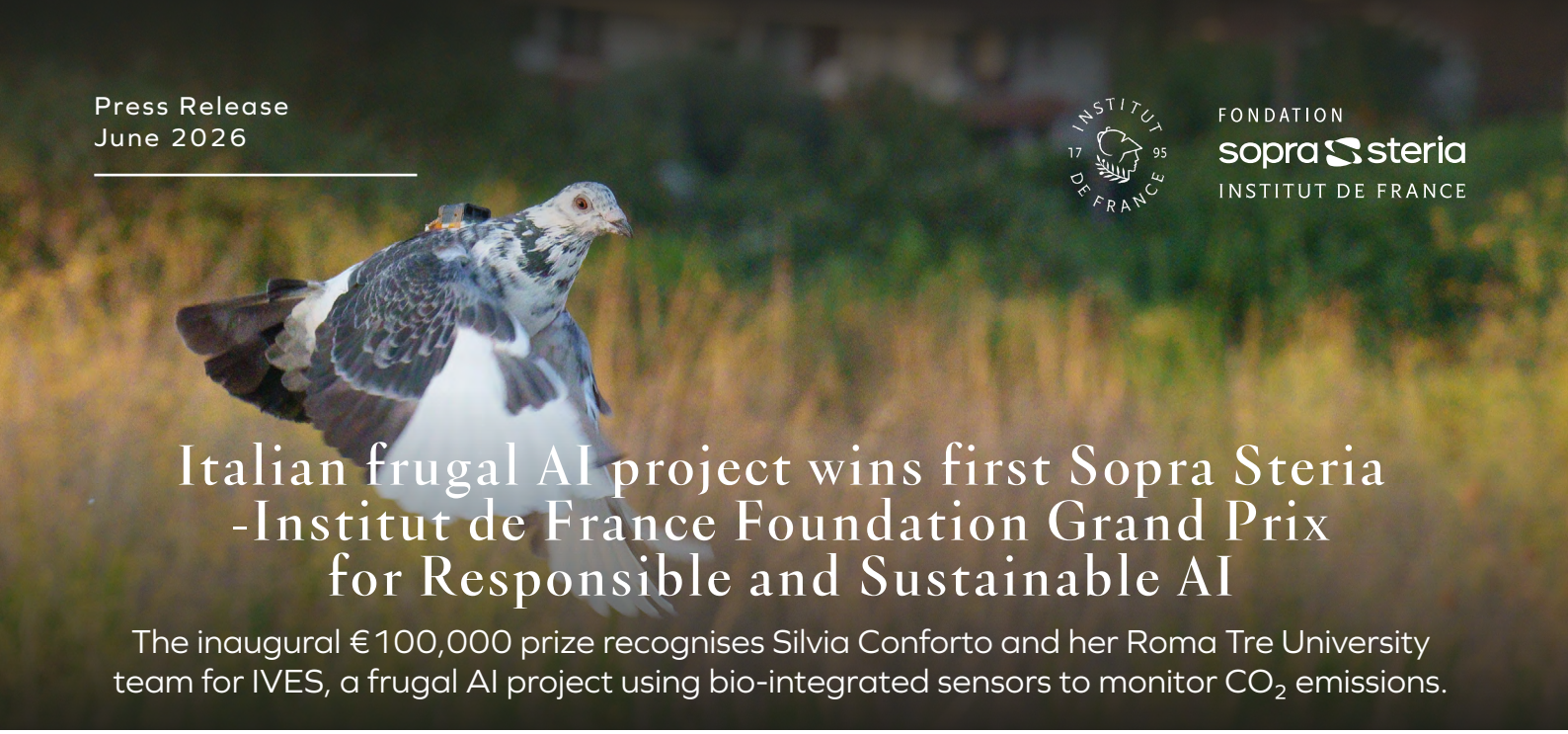


# Italian frugal AI project wins first Sopra Steria -Institut de France Foundation Grand Prix for Responsible and Sustainable AI

The inaugural €100,000 prize recognises Silvia Conforto and her Roma Tre University team for IVES, a frugal AI project using bio-integrated sensors to monitor $CO_2$ emissions.

**The Sopra Steria-Institut de France Foundation has awarded its first European Grand Prix for Responsible and Sustainable AI, worth €100,000, to Silvia Conforto, Professor of Bioengineering at the Roma Tre University.**

Established in 2025, this Grand Prix reflects the Sopra Steria-Institut de France Foundation's commitment to more transparent, efficient and responsible AI. It recognises scientific work carried out in Europe that explores the links between artificial intelligence, the environment, natural resources and biodiversity.

For this inaugural edition, the jury selected the *Intelligent Volatile Environmental Sensing* (IVES) project, developed by the research team at Roma Tre University led by Silvia Conforto and her team, which combines artificial intelligence, miniaturised sensors and bio-integrated technologies to offer an innovative and resource-efficient approach to environmental data collection.

Against a backdrop of accelerating development in artificial intelligence, and in particular generative AI, the Sopra Steria-Institut de France Foundation has chosen to support research that enables a better assessment of the environmental impacts of digital technologies, while promoting the emergence of more responsible and energy-efficient solutions.

> *"The environmental and societal challenges associated with artificial intelligence call for responses grounded in scientific rigour. With this Grand Prix, the Institut de France reaffirms its commitment to independent and rigorous research, which is essential for informing public debate and future decisions."*
>
> Xavier Darcos, Chancellor of the Institut de France

*The wave of artificial intelligence is gathering momentum. We all – businesses, researchers, citizens and governments – share a collective responsibility: to establish sufficiently high standards for artificial intelligence so that its power can be channelled towards applications that benefit the environment. This is precisely the direction taken by researcher Silvia Conforto and her team: putting AI at the service of scientific observation to tackle the immense challenge of climate change. Through this prize, the Sopra Steria-Institut de France Foundation supports European scientific research capable of putting technological innovation at the service of the public interest.*

Axelle Lemaire, Trustee of the Sopra Steria-Institut de France Foundation
and Executive Director of Sustainable Performance at Sopra Steria

**A project recognised for its innovative approach to environmental monitoring**

The *Intelligent Volatile Environmental Sensing* (IVES) project is developing an innovative approach to environmental monitoring, based on several years of research conducted by Roma Tre University in the fields of bioengineering, signal processing and wearable sensors. Gradually, this work has moved beyond the laboratory setting to focus on data collection and analysis in real-world conditions, using energy-efficient technologies suited to field applications. Building on this, IVES now combines artificial intelligence with bio-integrated sensors to revolutionise environmental monitoring methods.

In practical terms, miniaturised, non-invasive sensors are fitted to pigeons, which are able to move naturally through urban and suburban areas. As they move about, these birds collect real-time geolocation data, enabling the creation of detailed maps of $CO_2$ concentrations. This approach allows for the collection of high-resolution geolocation data, while significantly reducing the energy consumption and carbon footprint of traditional monitoring devices.

In addition to collecting geolocation and environmental data, the multi-sensor platform also records biomechanical data on the pigeons' flight using on-board motion sensors, enabling their behaviour and movement dynamics to be analysed with unprecedented precision.

Artificial intelligence plays a central role in the system. It enables the calibration of sensors, verification of the reliability of the collected data, generation of $CO_2$ concentration maps, and prediction of their trends. By cross-referencing environmental data with land-use data, IVES contributes to a better understanding of the distribution of emissions, the identification of high-concentration zones, and the informing of climate policy decisions.
Beyond mere observation, the project aims to strengthen the ability to anticipate climate challenges. To achieve this, it relies on predictive models designed to minimise the consumption of computing resources, following a 'frugal AI' approach that balances energy efficiency with performance.

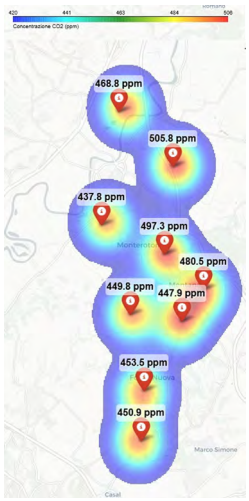
By combining sustainability, scalability and real-time data processing, IVES thus opens up new possibilities for low-impact environmental monitoring systems and contributes to the development of more responsible artificial intelligence.

**Silvia Conforto** is a professor of bioengineering at the Roma Tre University, where she also serves as Vice-Rector for Technology Transfer. Her research focuses on the integration of signal processing and smart sensor systems, with a constant commitment to transforming academic research into concrete, high-impact applications.

Her early work focused on biomedical signal processing, human motion analysis and neuromuscular control. More recently, her research has shifted towards wearable technologies and bio-integrated sensor systems applied to the environment. This evolution has led to the development of sustainable monitoring solutions based on so-called 'frugal' artificial intelligence, a central element of her award-winning work.

Silvia Conforto leads several large-scale interdisciplinary projects and has coordinated numerous national and international projects in partnership with leading industrial players. She is the author of over 230 scientific publications and is recognised as a leading figure in the international bioengineering community.

In addition to her research activities, she plays an active role in shaping technology ecosystems, acting as a bridge between academic research and industry to promote responsible and sustainable innovation.




**Artificial intelligence in the service of progress and the public good**

Through the creation of the Grand Prix, the Sopra Steria-Institut de France Foundation reaffirms its conviction that a technology set to profoundly transform societies must be accompanied by a rigorous understanding of its environmental and societal impacts.

While research into artificial intelligence is progressing rapidly, particularly in the field of generative AI, it is still characterised by a lack of established benchmarks and shared methods for accurately assessing its environmental impacts. At the same time, supporting the development of more efficient and energy-saving AI models has become essential to reconcile technological innovation with environmental sustainability.

With this in mind, the Foundation aims to support research that enables us to better measure, assess and address the environmental impacts—both positive and negative—of artificial intelligence and disruptive digital technologies.

**Members of the jury for the Sopra Steria Grand Prix present during the deliberations**

— Mr Etienne Ghys, President of the Jury, Permanent Secretary of the Academy of Sciences
— Mr Daniel Andler, Member of the Academy of Moral and Political Sciences
— Ms Anne-Marie Kermarrec, Member of the Academy of Sciences
— Ms Florence Robine, French Ambassador to Norway

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**The Institut de France**

Founded in 1795, the Institut de France's mission is to provide the five Academies with a harmonious framework in which to advance literature, science, and the arts on a non-profit basis. A major philanthropic actor, it promotes research and supports creative activity through the awarding of prizes, fellowships, and grants (nearly €16 million distributed each year through its network of hosted foundations). Placed under the protection of the President of the French Republic, it is also the custodian of a significant heritage, including the Palais on Quai de Conti, four libraries such as the Bibliothèque Mazarine, as well as numerous estates and collections bequeathed to it since the late 19th century. These include the Château de Chantilly, the Domaine de Chaalis, the Musée Jacquemart-André, the Château de Langeais, the Domaine de Kerazan, and the Villa Kérylos. The Institut is responsible for the preservation and public accessibility of these sites.
institutdefrance.fr

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**The Sopra Steria-Institut de France Foundation**

The Sopra Steria-Institut de France Foundation, created in 2001, puts digital technology at the service of people and the environment.

Housed at the Institut de France, it supports the development of community projects by associations to make everyday life easier for disadvantaged people. It works in the fields of education and training, social inclusion and environmental protection.

For more information, visit www.fondationsoprasteria.org

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**Sopra Steria**

Sopra Steria, a major player in the European tech sector with 51,000 employees across nearly 30 countries, is recognised for its consultancy, digital services and solutions. It helps its clients drive their digital transformation and achieve tangible, sustainable benefits. The Group provides a comprehensive response to the competitiveness challenges faced by large enterprises and organisations, combining in-depth knowledge of business sectors and technologies with a collaborative approach. Sopra Steria places people at the heart of its work and is committed to helping its clients make the most of digital technology to build a positive future. In 2025, the Group achieved a turnover of €5.6 billion.

***The world is how we shape it****
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