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Press Release

Nokia, Inria extend research partnership to address future challenges facing networks and distributed computing

- Common research lab focuses on human, society and industrial needs in all contexts of communications and computing.
- 4 year collaboration to address key challenges for the future of smart networking and edge computing.
- Partnership will create 15 new PhD student and post-doctoral researcher employment opportunities at Nokia Bell Labs and Inria.

24 November 2022

Paris, France – Nokia and Inria today announced the renewal of their common research lab for the next four years. The new phase was launched at an event in Paris on 14 November in the presence of Thierry Klein, President, Nokia Bell Labs Solutions Research, and Bruno Sportisse, Inria CEO.

Launched in 2008, the joint research lab brings together permanent scientists from the two partners with a newly created pool of PhD and post-doctoral scientists, with the strategic aim to solve the key scientific challenges linked to the evolution of networks and network applications. The focus of the joint research is on the benefits of network and distributed resources for contextual and personalized experiences in the digital connected world.

Future networks will have to connect digital, physical and human worlds to unleash the innate potential of human beings in the metaverse era. Networks will need to have the ability to optimize for a very wide range of customer-specific needs, for example, in industrial applications. The network will develop heightened sensing capabilities, and increased context-awareness in terms of user status and intent, dynamically and automatically adapting connectivity to meet user needs.

The networks will be 100% cloud-native, supporting a distributed architecture. Efficiency, resilience, and agility are critical attributes, with zero-touch management and orchestration achieved though artificial intelligence (AI) and machine learning (ML) -driven autonomy. Devices may not be able to meet all compute needs and will rely on a combination of edge cloud and local near-device computing, resulting in a massively distributed computing architecture. Diversified applications and services will need stringent quality of service requirements, enabled by data/AI-native networks in a highly distributed computing and data environment.

The Nokia Bell Labs-Inria collaboration will contribute to solving these challenges by addressing three aspects:

- **Distributed learning over 6G:** with the aim of enabling diverse AI applications operating in a distributed and cooperative way all over the system (core, network, edge, device), continuously learning and evolving.

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- **AI-based smart network management:** with the aim of providing analytics and trustworthy AI/ML for 5G-Advanced and 6G zero touch mobile network resource management.
- **Network aware industrial applications:** with the aim of optimizing and adapting industrial applications, such as cloud based robotic applications based on network performance and availability.

Thierry Klein, President of Nokia Bell Labs Solutions Research, said: "Inria and Nokia Bell Labs have enjoyed a rich and fruitful relationship for more than 20 years. Inria is part of the Bell Labs Distinguished Academic Partners program, engaging the best and brightest minds from the world's top universities and academic organizations to collaborate with us on transforming human existence. This new phase of our collaboration addresses the strategic challenges of the future digital connected world infrastructure and applications, and we are excited about the collaborative advantages of this continued partnership for Nokia, our industry, and society to enable enhanced experiences in a digitalized world."

Bruno Sportisse, CEO of Inria, said: "Nokia Bell Labs is one of our major strategic partners and I am pleased that we are strengthening our partnership. For Inria, working with a world leader with a European footprint such as Nokia is one of our priorities, whether to position ourselves on major scientific topics, to maintain joint scientific and technological excellence, or to have an impact on the scale of our work. The gradual evolution of our partnership also shows the importance of building long-term relationships based on trust, within a joint strategy and roadmap. Together with Nokia, we will work on the new frontiers for 6G mobile networks, which pose new technological and theoretical challenges, where software design and data exchange must be jointly addressed.

About Nokia

At Nokia, we create technology that helps the world act together.

As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Adhering to high standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world.

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About Inria

Inria is the French national research institute for digital science and technology. World-class research, technological innovation and entrepreneurial risk are its DNA. In 215 project teams, most of which are shared with major research universities, more than 3,900 researchers and engineers explore new paths, often in an interdisciplinary manner and in collaboration with industrial partners to meet ambitious challenges.

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As a technological institute, Inria supports the diversity of innovation pathways: from open source software publishing to the creation of technological startups (Deeptech).

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