Inria est un institut national de recherche dédié aux sciences du numérique, promue l'excellence scientifique et le transfert pour avoir le plus grand impact. Il emploie 2400 personnes. Ses 200 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3000 scientifiques pour relever les défis des sciences informatiques et mathématiques, souvent à l'interface d'autres disciplines. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 160 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

Contexte et atouts du poste

This postdoc is in the framework of Nokia Bell Labs - Inria joint lab. The research activity will be carried out at Nokia Bell Labs Paris/Saclay, but periodic visit to Inria Sophia Antipolis Méditerranée may be envisaged.

Nokia is a global leader in creating the technologies at the heart of our connected world. Powered by the research and innovation of Nokia Bell Labs, Nokia serves communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing. From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in virtual reality and digital health, Nokia is shaping the future of technology to transform the human experience.

Inria Bell Labs France, the French Nokia Bell Labs center and the second in size, is located in Nokia Paris Saclay, in Nozay close to Paris, as well as in Lannion. The Nokia Paris Saclay is a large R&D location open to its ecosystems and partners, and is located in the vicinity of Paris-Saclay campus. Nokia Bell Labs France is covering research on III-V photonics devices, optical transmission and signal processing, IP and optical networking, end to end mobile network solutions, software defined wireless networks, networks algorithms and control, cyber security, analytics, machine learning and mathematics of complex dynamic networks. Nokia Bell Labs France hosts also the "Nokia Innovation Platform", and a team in charge of maturation of research results, and "Le Garage", a dedicated space that fosters the "start-up" spirit. As part of the open innovation strategy of Nokia Bell Labs, Nokia Bell Labs France is also highly active in collaborative programs, research partnerships, and joint research laboratories such as the long-lasting "Common Lab" partnership with Inria to which this opportunity belongs.

Inria is a national research institute dedicated to digital sciences that promotes scientific excellence and transfer. Inria employs 2,400 collaborators organised in research project teams, usually in collaboration with its academic partners. This agility allows its scientists, from the best universities in the world, to meet the challenges of computer science and mathematics, either through multidisciplinarity or with industrial partners. A precursor to the creation of Deep Tech companies, Inria has also supported the creation of more than 150 start-ups from its research teams. Inria effectively faces the challenges of the digital transformation of science, society and the economy.

Mission confiée

In the context of the ongoing research activity at Bell Labs, described in recent publications from Nokia research groups [9] [10], the postdoc collaborator will work on the definition, implementation, and experimental evaluation of high-performance modular NFV techniques.

The applications being considered are the following:

- Carrier-grade middle-box applications, possibly with security-related objectives;
- Flow-level traffic processing, e.g. TCP gateways and other per-connection solutions to enhance performance of mobile networks with a focus on 5G mobile backhaul;
- Low-latency processing of radio samples from remote antennas for 5G front-haul;
- Datacenter applications handling high-throughput flows and I/O intensive functions;
- Enterprise networks and virtual Customer Premise Equipment (vCPE);
- User device support (NFV capabilities installed in users' gateways/set-top boxes, ...).

The postdoc will build on our on-going work and the performance evaluation will be carried out by
means of system simulations (NS3 simulator) and of experimental evaluation (using the Grid5000 and/or PlanetLab testbed platforms).

The candidate(s) will collaborate with researchers working in other Bell Labs locations, may interact with Nokia Business Groups, and is expected to contribute to scientific papers and to the development of our system infrastructure. The duration of this postdoc is 18 months.


**Principales activités**

Research activity

**Avantages**

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

**Rémunération**

Gross Salary: 2650 brutto per month