

## 2022-04889 - PhD Position F/M Application Performance Management of Smart Field Devices for the industrial Internet of Things

Type de contrat : CDD

Niveau de diplôme exigé : Bac + 5 ou équivalent

Fonction : Doctorant

### Contexte et atouts du poste

This is an unique opportunity for you to complete your education with a PhD between the industrial powerhouse Siemens, and the leading research institute Inria. As a Siemens employee, you will be primarily based in Erlangen, Germany, which frequent visits to Inria in Paris, France. You will be co-supervised by Siemens and Inria, benefiting from the best of both world, and resulting in a highly sought after combination of stellar engineering and scientific excellence.

Apply to this position by applying to <https://jobs.siemens.com/jobs/307464?lang=en-us>. What follows in this job description is taken from that job posting.

Do you like the sound of finding the smartest solution side by side with professionals and experts? If so, complete your education with a PhD position with us. We can help you to combine knowledge, discover connections, and formulate ideas. When you join our team, you will gain an insight into a range of departments and processes. It is a chance like no other to break new ground as we head into the future of electrification, automation, and digitalization. Seize this opportunity today!

### Mission confiée

What part will you play?

In industrial sensor networks, it is not possible to make predictions about topology, traffic, and interactions due to changing participants, tasks, and network relationships. By tracing, logging, and measuring the behavior of IoT devices and their interactions, one can identify problems and unbalanced utilization and respond accordingly. In this thesis, you will explore and investigate methods, technologies and tools for monitoring and controlling smart sensor systems and sensor networks with regard to their behavior and performance:

- You determine the state of the art in the field of application performance monitoring and management
- You will examine methods and tools available on the market for their applicability in sensor systems and sensor networks
- You develop novel software components for sensor nodes
- You will develop procedures and methods for monitoring and controlling sensor systems and networks. Among other things, you will use established technologies from distributed computer systems
- You implement the new methods and software components prototypically on embedded systems
- You design, implement and test demonstrators for testing in industrial applications

### Principales activités

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### Compétences

We don't need superheroes, just super minds.

- You successfully completed your university studies (standard duration > 4 years) in the field of electrical engineering, mechatronics, computer science or similar. You already gained basic knowledge in the areas of distributed systems, machine learning, network technology and embedded systems
- You have knowledge of hardware-related programming, especially on constrained device classes with real-time operating systems
- You are confident in using at least one system programming language (ideally C/C++/RUST) and have knowledge of a high-level language (such as Java Script, Python, golang)
- Due to the international structure of the doctorate, very good English and German skills are required. Knowledge of French is an advantage

### Informations générales

- **Thème/Domaine** : Réseaux et télécommunications  
Système & réseaux (BAP E)
- **Ville** : Erlangen (DE) / Paris (FR)
- **Centre Inria** : CRI de Paris
- **Date de prise de fonction souhaitée** : 2022-09-01
- **Durée de contrat** : 3 ans
- **Date limite pour postuler** : 2022-06-30

### Contacts

- **Equipe Inria** : AIO
- **Directeur de thèse** :  
Watteyne Thomas /  
[thomas.watteyne@inria.fr](mailto:thomas.watteyne@inria.fr)

### A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 200 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3500 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 180 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.

### Consignes pour postuler

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#### Sécurité défense :

Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

#### Politique de recrutement :

Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.

**Attention:** Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.