Industrie 4.0 fait référence à la 4ème révolution industrielle après la mécanisation, l'industrialisation et l'automatisation. C'est un concept qui a pour but de rendre les usines plus intelligentes en ayant recours à l'Internet des objets ainsi qu'aux systèmes cyber-physiques. Plusieurs entreprises implantées en France sont impliquées dans l’aboutissement de cette révolution numérique des industries.

Programme :

1. **Session plénière :** 13H30 : **Hubert Tardieu, CEO Advisor, ATOS SE**

*Industrial Data Platform for Industrie 4.0*

Companies adopting Industrie 4.0 will be able to generate superior products and services by responding to identifiable customer desires and current market conditions. We will see supply chain eco-systems established around “Common Industrial Data Platforms” where participants will intentionally share design, production, operational and market data. However, these Data Platforms will be far more than just a means of gathering and sharing data, they will become the very essence of collaborative working. They will be the catalyst to exploit the “positive externalities” created by such enterprise partnerships. Just as observed with Multi-Sided Markets in the B2C world, Common Industrial Data Platforms will drive network effects in the B2B world.

2. **Session de travail (participation limitée aux seuls participants inscrits)** :

   • **15H00: Benoît Iung, PR UL/CRAN**
     o Présentation des activités du CRAN qui relèvent de l’Usine du Futur (autour des systèmes intelligents de production, du Green IT, du contrôle, de la maintenance prédictive) puis un positionnement plus global, de l’implication de l’UL au sein de la KIC AVM (Knowledge Innovation Community in Added Value Manufacturing) et du Grand Est.

   • **15H30 : Gilles Simon McF/UL/LORIA & Vincent Chevrier, PR/UL/LORIA**
     o Présentation des activités du LORIA sur le thème "Usine 4.0"

   • **16H00 : Ye-Qiong Song, PR**
     o Industrial network evolutions and their potential contributions to Industry 4.0

Networking technologies and in particular Internet of Things constitute the key issues for realizing the Industry 4.0 concept. In this talk we present the industrial communication technology evolution, starting in 1980’s with the definition of the CIM (Computer Integrated Manufacturing) architecture and the fieldbuses for interconnecting sensors and actuators to PLC, the introduction of the high speed industrial Ethernet and IP networks in 2000’s, the recent use of wireless networks and wireless sensor networks to bring more flexibility in factories. Industrial IoT has

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3 Inscriptions auprès de nacer.boudlida@loria.fr AVANT le lundi 26 septembre, 14H.
also been defined as a promising communication solution for the future Industry 4.0. We will focus on the analysis of the real-time issues to show what are the challenges for effectively applying IoT to Industry 4.0.

- 16H30 : François CHAROY, PR/UL/INRIA Telecom-Nancy/INRIA Grand Est
  - Collaboration sûre à large échelle et présentation du projet OpenPaaS.
Industry 4.0, Industrie 4.0 or the fourth industrial revolution\(^1\) is the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet Of Things and cloud computing\(^2\)\(^3\)\(^4\).

Industry 4.0 creates what has been called a "smart factory". Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time, and via the Internet of Services, both internal and cross-organizational services are offered and used by participants of the value chain.

Program:

1. **Plenary Session**: 1:30 pm : **Hubert Tardieu, CEO Advisor, ATOS SE**

   **Industrial Data Platform for Industrie 4.0**

   Companies adopting Industrie 4.0 will be able to generate superior products and services by responding to identifiable customer desires and current market conditions. We will see supply chain eco-systems established around “Common Industrial Data Platforms” where participants will intentionally share design, production, operational and market data. However, these Data Platforms will be far more than just a means of gathering and sharing data, they will become the very essence of collaborative working. They will be the catalyst to exploit the “positive externalities” created by such enterprise partnerships. Just as observed with Multi-Sided Markets in the B2C world, Common Industrial Data Platforms will drive network effects in the B2B world.

2. **Working Session (with an audience limited to the only registred participants)**:

   - 3:00 pm: Benoit IUNG, PR UL/CRAN
   - Presentation of the CRAN’s activities related to Industry 4.0 (around intelligent production systems, Green IT, control, predictive maintenance). And afterward, we present a more global positioning of the involvement of the University of Lorraine (UL) inside the KIC AVM (Knowledge Innovation Community in Added Value Manufacturing) and in the Grand-Est Region.
• 3:30 pm : Gilles SIMON McF/UL/LORIA & Vincent CHEVRIER, PR/UL/LORIA
  o Presentation of the LORIA’s activities on the topic “Industry 4.0”

• 4:00 pm : Ye-Qiong SONG, PR/UL/LORIA
  o Industrial network evolutions and their potential contributions to Industry 4.0

Networking technologies and in particular Internet of Things constitute the key issues for realizing the Industry 4.0 concept. In this talk we present the industrial communication technology evolution, starting in 1980’s with the definition of the CIM (Computer Integrated Manufacturing) architecture and the fieldbuses for interconnecting sensors and actuators to PLC, the introduction of the high speed industrial Ethernet and IP networks in 2000’s, the recent use of wireless networks and wireless sensor networks to bring more flexibility in factories. Industrial IoT has also been defined as a promising communication solution for the future Industry 4.0. We will focus on the analysis of the real-time issues to show what are the challenges for effectively applying IoT to Industry 4.0.

• 4:30 pm : François CHAROY, PR/UL/Telecom-Nancy/INRIA Grand Est
  o Large Scale Safe Collaboration and Presentation of the OpenPaaS project

1 For registration, please drop a mail to nacer.boudjlida@loria.fr, Monday September 26th, 2 pm, the latest.