Data Ecosystems & Data Spaces: an Indo-French Hybrid Workshop

***#1:** Exchanging and exploiting data in a sovereign context: Identity, Trust, Architecture, Data Analytics and AI Technology*

Consulate General of France

21 Palace Road, Vasanth Nagar, Bengaluru, Karnataka 560052

13th December 2023

1:30 pm to 5:45 pm (Bengaluru), 9:00 am to 1:15 pm (Paris)

PROGRAM

1.30 pm to 1:40 pm
Workshop opening
Henri VERDIER
Ambassador for Digital Affairs, French Ministry of Europe and Foreign Affairs (MEAE*)

1.40 pm to 2:00 pm
Data Empowerment and Protection Architecture (DEPA)
Sharad SHARMA
Co-Founder, iSPIRT Foundation*

2.00 pm to 2.20 pm
Data Exchange Technology applied to the Agricultural and Geospatial industries
Didier NAVEZ
Senior Vice President – Data Policy & Governance, Dawex*

2.30 pm to 2.50 pm
Trusted Digital Ecosystems & Data Spaces
Frédéric LÉ
Representative of the French association AFNeT* in the GAIA-X Architecture Working Group
Inder S. GOPAL
CEO of India Urban Data Exchange

3.00 pm to 3.20 pm
AI & Railway: The Ethical Use of Data for Transportation Purposes
Claire NICODEME
Engineer & Research Project Manager, French National Railways Company SNCF*
Raja GOPALAKRISHNAN
General Manager Data Analytics, Centre for Railway Information Systems*, Indian Railways

3.30 pm to 3.45 pm
Coffee break

3.45 pm to 4.05 pm
Shaping the Future of the Cloud : maintaining control over data in the context of the Revolution Generated by AI
Thierry SOUCHE
Chief Technology Officer & Executive Committee member, OVHcloud*

4.15 pm to 5.30 pm
Data Research and Technology Tour
Eddie SOULIER, Professor, UTT* & Didier CALCEI, Associate professor, ISG*
— *Embedding Models and Dimension Reduction Technics for Ecosystem Representations*
Sunu ENGINEER, software architect, iSPIRT* & Tzolkin GARDUÑO ALVARADO, PhD student, UTT*/URCA*
— *Higher-Order Networks for Business Ecosystem Modelling*
Maxime GUERY, PhD Student, URCA*/UTT*
— *Open Data Ecosystem (ODECO) Project*
Ramya CHANDRASEKHAR, lawyer and researcher, CNRS*
— *The Virtual Assembly: Semantic Web & Peer to Peer Software*
Guillaume ROUYER, PhD Student, UTT*
— *How* beckn *can complement UE data space standards?*
Sylvain LE BON, Co-Founder at Startin'blox*

5.35 pm to 5.45 pm
Concluding remarks and collaboration emerging opportunities
Sharad SHARMA & Francis ROUSSEAUX, iSPIRT*

Special thanks to:
— *Consulate General of France* in Bangalore
— *Service Economique Régional (SER*)* of the French Embassy in India
— *Groupe de Recherche Internet, IA et Société (GDR CIS*)* of the French *Centre National de Recherche Scientifique (CNRS*)*

Referred Institutions

AFNeT

Since more than 40 years, AFNeT's network of experienced and recognized players has been at the service of industrial sectors to support and develop projects such as the European collaborative hub BoostAeroSpace or the international PLM standards for the aeronautics and automotive industries.

AFNeT is managing the ATLAS Program (Foundation for the Digital and Ecological Transformation of Industrial Sectors). ATLAS is a 3-year program (2020 - 2023), financed half by the industrial sectors and half by the public authorities (BPI), designed to provide multi-sector digital standards as a basis for the Digital Transformation of industrial sectors, to strengthen sovereignty and to facilitate the ecological transition.

CNRS

The National Centre for Scientific Research is an interdisciplinary public research organization under the administrative supervision of the French Ministry of Higher Education and Research:

- A budget of nearly 3.8 billion €
- 33,000 people dedicated to research
- More 1,100 research laboratories in France and abroad

The French state has entrusted the CNRS with the role of advancing knowledge for the benefit of society. The organization seeks to accomplish this national mission while respecting ethical rules and showing commitment to professional equality.

Indian Railways (IR) and Center for Railways Information Systems (CRIS)

India’s national railway organization, IR operates over 13,000 passenger trains and 8000 freight trains daily transporting over 23 million passengers and 4 million tons of cargo. Its annual revenues exceed INR 1740 billion. At a global scale, IR is fourth largest in terms of freight output, and the second in terms of passenger’s transport output. The network spans 68000 km, with assets including over 13,000 locomotives, 300,000 freight wagons, and 70,000 passenger vehicles, with over 1.3 million employees. The Ministry of Railways performs the role of the corporate office of IR, as well as the policy and regulator for the railway sector in India.

CRIS (Centre for Railway Information Systems) is an organization under Ministry of Railways and has successfully delivered complex Railway IT systems in core areas. Since its inception, CRIS is developing/maintaining software for the key functional areas of the Indian Railways such as passenger ticketing and operations, freight invoicing and operations, traffic control, asset maintenance, materials management, HR, finance and accounting, and security.

Realizing the power of modern emerging technologies, CRIS is introducing emerging technologies like Blockchain, AI, ML, Big Data, Business Intelligence, Cloud Services (private as well as public cloud), Agility, Chatbots, IoT, AR/VR, etc. to perform Train Route Optimizations, Capacity Enhancement, Prediction of Train Delays and Waitlist clearance, Predictive maintenance of Rail Assets, forecasting Energy Consumption, Train Timetable Optimization, etc. and thus providing a new dimension to its solutions.

Dawex

Dawex is the leader in data exchange solutions to distribute or share data products, with trust, for any business case, in compliance with data regulations. With Dawex Data Exchange technology, organizations create data ecosystems and data spaces, such as Corporate Data Hubs, Industry Data Hubs and Data Marketplaces to address economic, environmental and decarbonation challenges.

At the invitation of the United Nations, Dawex has joined the Data expert group of the United Nations Environment Program. Awarded Technology Pioneer by the World Economic Forum, Dawex is also the initiator of an international standardization program on Trusted Data Transaction.

GDR CIS

The Center for Internet and Society (CIS) is a CNRS research center, gathering the research unit "Internet and Society" (UPR 2000), created in 2019, and the research group "Internet, AI and Society" (GDR 2091), created in 2020. At the intersection of disciplines such as sociology, law, history, economics, political science, information and communication sciences, informatics and engineering sciences, the CIS intends to build independent and interdisciplinary research and expertise. The CIS's research endeavors contribute to enlighten the major technical controversies and the definition of contemporary policies related to digital, to the internet, and more broadly to informatics.

With an identity based on the interdisciplinarity of its theoretical roots and its methods, the center aims to foster expertise and critical reflection on the emerging issues of digital technology, such as artificial intelligence (AI), place of the major platforms in the economy, proliferation of robotics, etc. As part of its activities, CIS is also a laboratory for the elaboration and promotion of good practices in digital technology for science (collaborative tools, digital methods of survey, analysis and visualization of data, communication strategy, participatory research).

ISG

ISG (Institut Supérieur de Gestion) offers a unique academic model that will empower tomorrow's managers and entrepreneurs. Founded in 1967, ISG welcomes 5,000 students per year to 8 campuses in France (Paris, Bordeaux, Lille, Lyon, Nantes, Nice, Strasbourg and Toulouse) plus one in Geneva. Its campuses in the heart of cities offer a real appeal, particularly to foreign students.

ISG's innovative educational approach, based on experiential learning, aims at training responsible, creative and entrepreneurial managers, able to evolve internationally. With a network of 160 international partners in 60 countries, ISG offers students multiple opportunities for double degrees. A precursor in the digital sector, thanks to being part of the IONIS group, ISG offers "tech" certifications and an Engineering Management course within the renowned engineering school EPITA (a computer intelligence engineers' school, part of the IONIS group).

iSPIRT

iSPIRT is a think tank that build public goods without public money. Its public goods are free of commercial interests: so, a think tank is more credible and impactful than a traditional trade body. iSPIRT core beliefs are:

- We Are At An Inflection Point As A Country, And It's Time To Act

We don't see ourselves in some kind of self-healing system where problems will get easier to solve as they age. Problems must be addressed to be eliminated. The sooner they are addressed the more simply they are solved. The time to act is now. Any delay in nurturing or fostering the product industry could impair growth

and curb the opportunity that this industry presents to the country. The positive impact is on employment, capital, investment, infrastructure and ultimately, revenue and growth for the country as a whole.

- Technology As A Leverage Point For Changing Systems

We believe that there are places within a complex system (an economy, a city, an ecosystem) where a small shift in one thing can produce big changes in everything. We use Donella Meadows' framework to think about leverage points where interventions can make a difference. We see software products as the "magic bullets" that can alter an entire system and bring about positive social change by leapfrogging to the next generation.

- Entrepreneurs Help Entrepreneurs

Just like a chain of mountain climbers, our product entrepreneur community is at different stages of evolution. There is an entire generation which has already established itself in terms of product, processes, people, and market. We encourage this generation to "pay forward" and nurture the newcomers. Learning from those who have been "through the grind" ensures that insights are better and mistakes are fewer. This also means the potential of catapulting the next generation to the path of growth and prosperity much quicker due to better tacit industry knowledge.

- Enablers, Not Cheerleaders

We are not in the stadium but are in the field. We have a keen sense of the institutional voids and ecosystem gaps that are holding back the growth of the Software Product Industry in India. We adopt a "roll up your sleeves" attitude to fix these voids and gaps. Towards this end, we work for a cause not for applause. We are an oasis of high trust that allows many collaborators to come together to build the 'public goods.' Our public goods are available to all software product companies on an open-access basis.

IUDX

IUDX (Indian Urban Data Exchange) was born out of the need to enable data exchange between various city departments, government agencies, citizens and private sector. IUDX helps the cities in using the data intelligently to address complex urban challenges, establish integrated development across various aspects of the urban sector and catapult them to the next stage of innovation. IUDX is completely open source, based on an underlying framework of open standard APIs, data models, and the security, privacy and accounting mechanisms that will facilitate its easy adoption across the digital ecosystem.

The IUDX Research program complements the IUDX development and deployment efforts. The IUDX program explores, together with academic partners, the technical, legal, organizational and economic barriers to the use and re-use of non-personal data. While the initial focus is on urban data as collected within the IUDX platform, the focus is broader and encompasses agricultural, industrial, health and educational sectors.

OVHcloud

Founded in 1999, OVHcloud is a French company with an international presence, based on a backbone of data centers and points of presence spread across the globe. As Europe's leading cloud provider, OVHcloud delivers public and private cloud products, shared hosting and dedicated server solutions in 140 countries worldwide. OVHcloud also offer domain name registration, telephony services and internet access to our customers.

As the world around us changes, data is becoming an increasingly significant part of our personal, social and professional lives. To match the ubiquity of data in this digital landscape, OVHcloud is committed to offering well-designed solutions. Our products help all of our users build an infrastructure that matches their goals, with an eco-friendly approach and manageable costs. We are also developing an active ecosystem, in which all actors use their expertise to contribute to the success of our services. This way, we meet our community's expectations while sharing common values.

SER

The regional economic department of the Embassy of France in India, part of the French Treasury, is in charge of analysing India and South Asian's macroeconomic, financial and sectoral policies, as well as promoting French economic interests. It includes providing support for French companies, promoting France's attractiveness as an investment location and promoting French positions on economic issues. The regional economic department has three offices in India (Delhi, Mumbai and Bangalore) and is also in charge of the coordination of the French economic actions in South Asia region (Nepal, Bhutan, Afghanistan, Pakistan, Bangladesh, Sri Lanka and Maldives).

SNCF

SNCF, is the national railway company of France. Established in 1938, it is one of the largest and most prominent railway operators in Europe. SNCF plays a vital role in France's transportation infrastructure, providing extensive rail services that connect cities and regions across the country. SNCF operates a vast network of high-speed trains (TGV), regional trains, and commuter services, making it an essential part of daily life for many French citizens and a popular choice for travelers and commuters. Over the years, SNCF has continuously modernized its infrastructure and services to meet the demands of a changing transportation landscape, making it an integral component of France's public transportation system.

Due to the large panel of tasks and activities, lots of data are produced, from various sensors. Artificial Intelligence (AI) is the key ingredients to make the most of that information. Algorithms are developed both in-house or with provider. It ensures that skills are maintained at SNCF while still being able to industrialize and scale up projects fast.

Startin'blox

Startin'blox is the leading app building solution for data spaces and business ecosystems. By leveraging the data interoperability standards existing around the world, Startin'blox makes it easy for all organizations to deploy applications perfectly suited to any data exchange use case. Startin'blox provides applications for prominent European actors, such as the European Space Agency or Cooperatives Europe, who rely on their expertise to interconnect their communities all around Europe.

URCA

The University of Reims (around 3,000 students in 2023) was created in 1548, thanks to the Cardinal de Lorraine who made the papacy turn it into one of the main cathedral schools in Europe in the Middle Ages. It was closed down in 1793 during the French Revolution and disappeared almost completely for a century, until it came back in the sixties.

The creation of a University Institute of Technology in Troyes (1973), a Superior Technical Training Institute (1985) and a University Institute of Technology in Charleville-Mézières (1995), the development in Troyes of a second unit of Law, Economics and Literature Faculties of Reims (1991) and the opening of a University Institute of Technology in Châlons-en-Champagne (1993) have now asserted the regional roots of a university that became in 1982 the University of Reims Champagne-Ardenne.

UTT

The University of Technology of Troyes is a French university in the academy of Reims. The UTT is part of the network of the three universities of technology, found by the University of Technology of Compiègne. Inspired by the American University of Pennsylvania in Philadelphia, these universities are

a French mixture between the universities of this country and its schools of engineers (Grandes Ecoles). UTT is ranked in the top 10 engineering schools 2017 in France by Usine Nouvelle. They are indeed organized like the universities, temples of knowledge being based on the triptych teaching-research-valorization (transmission of knowledge, the creation of knowledge and the transfer of knowledge in economic fabric). Their teaching model is a mix between the North-American model and the French traditions: courses choice, separation of the courses, work directed (TDs) and practical work (TPs). These three universities give thus an engineering degree equivalent to the Bac+5 formations of the French Grandes Ecoles.

The UTT was founded in 1994 and inaugurated by Jacques Chirac. One of the first chairman of the university has been Thierry Breton (1997–2005), honorary Chairman of both Thomson and France Telecom, and former finance Minister from France.

Speakers

Didier CALCEI

Expertise

Didier Calcei holds a PhD in economics from the University of Aix-Marseille (France). His doctoral thesis focused on technological competition between technological standards. Didier Calcei is currently Associate Professor of Innovation, Strategy and Entrepreneurship at ISG - International Business School (Paris). He has more than 15 years of experience in higher education. He teaches innovation management, creativity and entrepreneurship.

Topic

His current research focuses on pedagogical transformations and learning theories, entrepreneurship, business ecosystems and the video game industry.

Ramya CHANDRASEKHAR

Expertise

Ramya is early career researcher at the Center for Internet and Society of CNRS* within the ODECO European project. She has worked with the Berkeley Centre for Law and Technology as a biometrics regulatory fellow. She has also worked with the Data Justice Lab at Cardiff University as a Data Justice Fellow. Her experience includes working with academic research centers (specifically the Centre for Human Rights and Global Justice, and Guarini Global Law & Tech), a civil society organization (Internet Democracy Project) and international organizations (specifically the World Bank and UNICEF). Ramya's research has spanned issues of data protection, digital identity and surveillance and data governance by international organizations.

Ramya holds a Masters of Law from New York University. She also holds a Bachelors of Law and Social Science from the West Bengal National University of Juridical Sciences.

Topic

Her focus areas are legal and governance mechanisms for open non-government data. In terms of legal mechanisms, Ramya's will study licensing models for open non-government data. In this piece of her research, she will draw from CNRS' previous work on data commons as well as licensing developments from the open source community. Concerning governance mechanisms, Ramya will work with other ODECO (a 4-year Horizon 2020 Marie Skłodowska-Curie Innovative Training Network initiative, ref. H2020-MSCA-ITN-2020) researchers to question the concept of 'value' in open data ecosystems and develop certain principles for defining and achieving value.

Finally, her research will critically examine some open non-government data case-studies. Some examples include researchers' access to data of social media platforms, open datasets for AI models, and health and health-adjacent data ecosystems. These case-studies are also intended to inform EU law and policy that impacted by open data initiatives, such as EU legal frameworks on personal data protection, non-personal data, and AI. Ramya's research disciplines include law, science and technology studies, and critical data studies.

Sunu ENGINEER

Expertise

Dr. Sunu Engineer is an iSPIRT volunteer and scientist by profession. Currently working as the Chief Legal Technologist at PwC Germany. Works on AI technologies in various spaces such as Legal and on ecosystem modeling problems related to safe and responsible use of AI at scale in societies.

Topic (together with Tzolkin Garduño Alvarado)

Ecosystem modelling.

Tzolkin GARDUÑO ALVARADO

Expertise

Tzolkin has worked in different fields ranging from topology, pattern recognition for medical imaging, discrete geometry, complexity theory, financial systems, blockchain theory and smart contracts, natural language processing, optimization and artificial intelligence. All of the above fields have required her to delve into the theory as well as prototype drafting and implementation, testing, scaling and deployment. The set of tools that she has used involve multiple operating systems, microservices, specialized libraries as well as emerging technologies, some examples of languages are: Python, C, C++, Matlab, R, PostgresQL, MySQL, MongoDB, MariaDB, Bash, Serpent. These have been used on Gentoo, Debian, Ubuntu, Windows, Google Cloud services, Amazon Web services, etc.

She is a mathematics graduate from the Universidad Nacional Autónoma de México, where she also got a computer science degree. She is currently starting her second year as a PhD student, UTT/URCA.

Topic

Her research involves ecosystem modeling, in particular business and innovation ecosystems modeling, from a mathematical point of view.

Inder GOPAL

Expertise

Dr. Inder Gopal is currently Research Professor at the Indian Institute of Science, Bangalore. He also heads the Centre of Data for Public Good, which studies various technical and non-technical aspects of how data can improve the lives of citizens. He is responsible for several data initiatives such as the India Urban Data Exchange, the Agricultural Data Exchange, and the Universal Geospatial Interface Exchange. He was previously Vice President of Software at Ericsson, where he was instrumental in launching their Edge computing efforts. Before that, he was Vice President of Networking at IBM, where he had responsibility for all of IBM's hardware and software networking products. He has also served as Chief Architect of AT&T and Chief Technology Officer of Prodigy.

Dr. Gopal has also had a distinguished research career in the area of computer networks, with 20 patents and more than 70 technical publications to his credit. He worked at the IBM T.J. Watson Research Center, earning two IBM Outstanding Innovation Awards. He has served as editor of several technical journals and was elected Fellow of the IEEE. He has a PhD from Columbia University, New York and a BA from Oxford University, England.

Raja GOPALAKRISHNAN

Expertise

Gopal leads the Advanced Data Analytics, and the Data Strategy teams at the Centre for Railway Information Systems (CRIS), the information technology arm of Indian Railways. He is also a senior member of the civil services in India — a joint-secretary level officer of the Indian Railway Traffic Service — with over 24 years experience in transport planning and policy, passenger, suburban, freight operations, marketing , and revenue management. He was also a research fellow at the Intelligent Transportation Systems Laboratory, Massachusetts Institute of Technology and a visiting scientist at the Centre for Infrastructure, Transport, and Urban Planning at the Indian Institute of Science, Bangalore. Gopal holds an undergraduate degree from the Indian Institute of Technology, Delhi, an MBA from the University of Delhi, and a PhD from the Singapore University of Technology and Design.

Topic

In his talk, Gopal will describe the data and analytics journey of Indian Railways, the challenges involved in scaling such initiatives at the enterprise level, and potential solutions. He will also throw light on the emerging future scenarios in the data and analytics space in the railway sector in India.

Maxime GUERY

Expertise

Maxime is a PhD student at the University of Reims Champagne-Ardenne and is working for the company Data Nostra as part of his grant.

Topic

His research aims to develop a methodology to analyze complex phenomena from digital traces using higher-order networks such as the simplicial complex. His areas of expertise are graphs and artificial intelligence.

Sylvain LE BON

Expertise

Sylvain Le Bon has cofounded multiple companies in the last 15 years, focusing on digital transformation and is now an expert of interoperability and decentralization of organizations.

Topic

Decentralized digital ecosystems are emerging all around the web, especially in Europe where the European Commission is helping industries to deploy data spaces. These emergent ecosystems rely on standards to ease data sharing between all stakeholders. To ensure their adoption, these data spaces need 3 key factors: network effects, ease of monetization and broad adoption. Open standards such as the beckn protocol can be the key to success for these data spaces.

Frédéric LÉ

Expertise

Frédéric Lé has over 30 years' experience in international technology companies in the United States and Europe. He is a graduate of Audencia business school and holds a Master in computer science from Paris Dauphine-PSL University. He helps organizations succeed their dual digital/agile transformation. He represents the French association of net users AFNeT in the GAIA-X architecture working group. His areas of expertise include Business Model Design, Software Architecture, Domain Driven Design, Data Space Architecture, agility@scale and Lean.

Frédéric is currently focused on the creation of a data space for the construction ecosystem to support climate neutral territories and cities. He co-leads a working group composed of representatives of construction and engineering firms, public owners (national, and regional), public authorities and agencies. He is contributing to the community as:

- Maintainer of the continuous architecture alongside enterprise architects from Michelin and Société Générale
- Leader of the working group that developed the Open Agile Architecture Standard™
- Contributor to the Digital Practitioner Body of Knowledge

Topic

Aggregating data from different sources can create enormous value by using data analytics and AI to generate insights, predictions and prescriptions. This can help accelerate the digital transformation of private companies and e-government. Many of these powerful use cases depend on data sharing, which is already difficult within a siloed organization, and becomes even more challenging when data sharing involves multiple parties within an ecosystem.

The concepts of data ecosystems and data spaces have emerged in response to the opportunity to develop such data-sharing ecosystems. Curry and his co-authors1 define a data ecosystem as a sociotechnical system enabling value to be extracted from data value chains supported by interacting organizations and individuals and a data space as a platform for data sharing.

The aim of the workshop is to take stock of the state of the art in data spaces, comparing best practices being developed in Europe, India, and the rest of the world. This will be organized around the following list of themes:

1. Data sharing business models: How can we design business models that encourage ecosystem players to share their data? How to create hybrid consortia associating public and private players to help solve complex problems such as achieving carbon neutrality? How to design innovative digital public services that leverage the creation of new data-sharing ecosystems.
2. Usage control and data sovereignty: Once data leaves an organization's perimeter, it becomes difficult to ensure its security and control its use. Review the combination of legal and technological solutions to ensure security and control over the use of shared data.
3. Architecture models: Compare and contrast data space architecture models, focusing on their conceptual models and software architecture implementations of the initiatives below:

[1] Source: Curry, Edward; Scerri, Simon; Tuikka, Tuomo. Data Spaces: Design, Deployment and Future Directions. Springer International Publishing, ISBN 978-3-030-98635-3

- The Data Empowerment and Protection Architecture (DEPA)
- The Data Spaces Business Alliance (DSBA) technical convergence document which covers Gaia-x, IDSA and Fiware
- The MIT Open Algorithms Project

4. Data interoperability and lineage: Which data architecture and modelling paradigms, such as Data Mesh or Meta Data Services, can facilitate data interoperability? How to represent data semantics? How can data exchange APIs such as NGSI-LD or IDSA Data Space Connectors be designed? How to manage Data Lineage at the scale of a data ecosystem?
5. Managing identities at scale: Which identity management approach for which use cases. Strength and limits of Self-Sovereign Identity Models?
6. Organizational models and governance: Compare and review a few successful and less successful data spaces from an organizational and governance perspective. Identify organizational and governance issues and patterns.

Didier NAVEZ

Topic

The emergence of data ecosystems and data spaces, the development of reference architectures, standardization initiatives, as well as new data regulations, are key markers of a maturing data economy, creating the conditions for:

- Streamlined data circulation in a secure and compliant environment, across organizations, sectors and geographies;
- Trusted data transactions between multiple stakeholders in the private and public sectors;
- Enhanced interoperability across data ecosystems and data spaces.

Data intermediation service providers, as defined in the EU Data Governance Act, play a crucial role in facilitating data exchanges at scale and in creating trust.

The presentation will focus on key trends and best practices around data exchange, bringing a very practical perspective based on concrete examples of industry data hubs and data marketplaces. The focus will be put on the agricultural and geospatial sectors, highlighting how those initiatives are creating tangible business benefits, and fostering innovation, by facilitating data access, simplifying and securing the distribution of data products, in full compliance with regulatory requirements.

Expertise

Didier Navez is Senior Vice President, Data Policy & Governance at Dawex. In his role, Didier engages with regulatory bodies, think tanks and European & international institutions, contributing to the definition of data policies, norms, frameworks and best practices. Additionally, Didier provides guidance to organizations on the benefits and impacts of data regulations on their business activities. Thought leader in the domain of digital and data strategy, data ecosystems, data monetization, ecommerce and mobile, he worked for over 10 years with leading technology research firms Gartner and Forrester, advising business and technology leaders in their digital transformation journeys, across Europe and North America. He also previously managed several multi-million-dollar IT transformation programs, had leading roles at international consultancies and technology firms with full P&L responsibility, including CSG International (NASDAQ: CSGS) and Texas Instruments (NASDAQ: TXN). He brings a solid skill set in business development, business/IT consulting, program management and general management having worked with Fortune 500 companies as well as startup ventures. Didier holds a Master's in Business Administration and Finance from Solvay Brussels School.

Claire NICODEME

Topic

Due to the limitations of Deep Learning methods, the possibilities they offer and the impact of such technologies, Claire NICODEME also has in charge ethical questioning and recommendation. It covers the ecological impact and CO2 footprint of data processing tools (hardware and models optimization, pruning, etc.) but also societal impact consideration (biases, skills lose, manipulation, etc.).

Since 2023, due to the rise of new image matching and "stitching" methods, she works with her team on 3D environment reconstruction from images and videos. The aim is to achieve a fast and efficient tool to build, maintain and update digital twins related to railway (stations included).

Expertise

Claire NICODEME is an engineer and PhD in Signal & Image Processing and Artificial Intelligence. As a Researcher in Computer Vision and Transportation, she has contributed in a dozen scientific papers and proposed two patents. She is involved in several European and international project related to transportation, data and AI. In particular, she is a stakeholder in the Pan-European Railway Data Factory.

Francis ROUSSEAUX

Expertise

Francis Rousseaux is engineer, full professor in Artificial Intelligence and Machine Learning. As a Researcher in Computer Science and Digital Humanities, he has contributed to more than 200 scientific publications, and was involved in many IT projects, supported by UE or French ANR.

He has been Auditor of the 50th National Session of *Institut des Hautes Etudes de Défense Nationale* IHEDN (1997), member of the International College of Philosophy and director of an associate team on the theme of Strategic Decision (1998-2000), regular partner of IRCAM—Centre Pompidou (2000-2019), and is currently Associate Professor at Goldsmiths College, University of London (2017-now).

Seconded to the Expertise France agency with the status of International Technical Expert on behalf of the French Ministry of Europe and Foreign Affairs (MEAE), he exercised (2019—2021) the functions of deputy rector of the University of Galatasaray in Istanbul, Turkey, the University (5000 students) also integrating the Galatasaray High School (1000 students).

Since October 2023, in cooperation with iSPIRT and the Indian French Tech, Francis Rousseaux is supporting the Indian techno-legal approaches around Public Data Exchange Infrastructure and Artificial Intelligence regulation.

Guillaume ROUYER

Topic

The aim of Guillaume's research project is to test the ability of territorial data spaces to encourage the development of new economic models in the field of the circular economy, including industrial and territorial ecology, the functionality economy and consumption in short circuits.

On a technical level, while the hybridization of SOLID and ActivityPub seems promising for the deployment of data spaces, the many initiatives being developed around the world (DEPA, Beckn, GaïaX,

IDSA, etc.) also seem highly relevant: Are these different initiatives comparable, and to what extent can they converge, articulate or be compatible are some of the questions that motivate me to take part in this workshop.

Expertise

Guillaume Rouyer is a graduate of the Institut d'Études Politiques (IEP) in Bordeaux (2007). After setting up a small company in the energy sector (Le comptoir des négawatts - winner of the 2008 Midi-Pyrénées region environment prize), he started a doctorate in political philosophy on the concept of a possible metamorphosis of capitalism (Not defended).

He is the founder of Virtual Assembly and Chemins de la Transition, two associations in which he is involved as a board member. Since autumn 2022, he has been engaged in a PhD under the supervision of Eddie Soulier at the Techcico laboratory (UTT) in partnership with ADEME and the SCIC Data Players. His PHD is based on the experimentation of a socio-technical device based on SemApps, a software developed by the Virtual Assembly community, which embeds the SOLID specification, the ActivityPub protocol (part of the semantic web standards), the PAIR model and the Social Code, in order to encourage the development of territorial data spaces.

Sharad SHARMA

Expertise

Sharad Sharma's personal mantra is to lead big and small companies through orbit change. Most recently he was the CEO of Yahoo! India R&D and was responsible for emerging markets engineering and several key global products. His 23+ years of experience in internet, software and wireless sectors involves a turnaround (of VERITAS India ops), a startup (now part of Cisco), and an intrapreneurial setup of AT&T/Lucent's R&D in India. He is an evangelist for developing technology product businesses in India and participates in efforts to nurture the supporting ecosystem.

He is part of the Governing Council and a Co-Founder for iSPIRT (Indian Software Product Industry RoundTable), actively mentor startups, and speak frequently on industry issues.

Thierry SOUCHE

Topic

Data sovereignty has become a recurring theme in the EU and abroad, with users acknowledging the need to maintain stronger control over their data in a complex regulatory environment. While industry players and public authorities agreed on common principles and standards to advance toward this sovereignty, the AI revolution is changing prior paradigms and forcing stakeholders to adapt.

In this context, this intervention will touch on how the organizations can maintain sovereignty and trust over their data in the current AI revolution.

Expertise

Thierry Souche is OVHcloud's Chief Technology Officer, a position he holds since joining the company in 2021. He leads the Product Business Unit, in charge of the deployment and operation of the OVHcloud services for all customers segments.

Prior to OVHcloud, Thierry operated for 25 years in the Orange Group, as a Technology leader in the Netherlands, UK and Romania, and for the last 9 years led digital transformation and innovation as Group CIO.

Eddie SOULIER

Expertise

Eddie SOULIER is a graduate of the Grenoble Institute of Political Science, and also has a degree in economics from the Faculty of Economics at Grenoble Alpe University. He holds two post-graduate diplomas in Political Theory and Industrial Economics. He worked as an information systems representative for ten years at CIGREF, which is a major French companies and public administrations association for information systems in France.

He is responsible for change management in the information systems department of UNEDIC, the public organization responsible for managing unemployment insurance in France. He then returned to the world of research with a doctorate in artificial intelligence at Sorbonne University on digital storytelling tools for communities of practice. At the same time, he was Director of Research, then Director of Consulting and Projects at a start-up specializing in knowledge engineering and collaborative tools. He then joined the University of Technology of Troyes (UTT) as an associate professor. He obtained his habilitation to direct research (or HDR) at university of technology of Compiègne (UTC), and supervised as professor nearly fifteen PhD theses in computer science and management science. For 20 years, he was also in charge of the Centre for Pedagogical Innovation at UTT.

The areas of his application range from energy systems (such as local energy communities), service modelling (Service science, management, and engineering, SSME) and customer experience, to controversy management for the ecological transition, process mining, territorial intelligence or Smart City modeling and innovation ecosystems. Recently, he has become increasingly interested in the links between the characterization of the economic system, fundamental ontology and the question of politics. This covers also, for example, criticism of artificial intelligence or surveillance capitalism (Zuboff) and ethics in relation to ontology.

Henri VERDIER

Expertise

Henri Verdier is a French entrepreneur and digital specialist who has been serving as the country's ambassador for digital affairs since 2018. Previousy he was the French State Chief Technology Officer (CTO) from 2015 to 2018 and, before, the Head of Etalab, the French Agency for Public Open data.

In the private sector, Henri Verdier was first CEO of MFG Labs,[3] an internet startup involved in social data mining, and Chairman of the Board of Cap Digital, the French European Cluster for Digital Content and Services located in Paris Region.