Session Report Template

The objective of this report is to showcase tangible examples where science and innovation have significantly contributed to the achievement of the SDGs and the 2030 Agenda set by the United Nations.

Context

Science and evidence-based actions are indispensable for eradicating poverty, ending hunger, tackling climate change, reversing biodiversity loss, and reducing inequality.

Science is the key, and our best hope, for accelerating progress across the Sustainable Development Goals. Achieving this requires shared expertise from all disciplines.

This was evident at the SDG Summit in September 2023, where the role of Science, Technology, and Innovation (STI) and the importance of closing STI gaps were central to discussions. In their political declaration at the Summit, Member States committed to bridging the science, technology, and innovation divides, responsibly using STI as drivers of sustainable development, and building the capacities necessary for sustainable transformations:

"We commit to bridging the science, technology and innovation divides and the responsible use of science, technology, and innovation as drivers of sustainable development and to build the capacities necessary for sustainable transformations.

We reiterate the need to accelerate the transfer of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.

We will take action to enhance the ability of developing countries to benefit from science, technology, and innovation and address the major structural impediments to accessing new and emerging technologies including through scaling up the use of open science, affordable and open-source technology, research and development, including through strengthened partnerships.

We aim to increase funding for SDG-related research and innovation and build capacity in all regions to contribute to and benefit from this research.

We will seek to better realize the benefits and address the challenges of artificial intelligence.

We undertake to increase the use of science and scientific evidence in policymaking."

Political declaration of the high-level political forum on sustainable development convened under the auspices of the General Assembly 18 and 19 September 2023

Now we need to illustrate the "HOW".

How science and innovation are advancing the planet's well-being, enhancing human prosperity, fostering partnerships, and promoting peace.

1 Identification

1.1 Session ID

250409

1.2 Session Title

Responsible Artificial Intelligence in an Urban Context: Using Data to Make Cities More Inclusive, Resilient and Sustainable

1.3 Session Date and Time

September 25, 9:00am

1.4 Convenor name

Catherine RÉGIS

2 Speakers and Panelists

Please list all speakers and panellists, including their names, titles, and organisational affiliations.

2.1 Speaker 1

2.1.1 Name: Catherine RÉGIS

2.1.2 Organisation name: Université de Montréal; IVADO

2.1.3 Type of organisation: Academic institution

2.1.4 Title of the presentation: TBD

2.1.5 Summary of the presentation (max 200 words):

Catherine Régis will introduce IVADO, an interdisciplinary, cross-sectoral research, training and knowledge mobilisation consortium whose mission is to bring together research centres, government bodies and industry members to co-build ambitious cross-sectoral initiatives with the goal of fostering a paradigm shift for responsible AI and its adoption. One of her ongoing initiatives, Urban AI, is a pilot project led in Montreal that seeks to determine ethical and inclusive ways to use AI to address priority needs of the residents (such as improving the discoverability of services, access to affordable housing, or reducing digital divides). This project was recently featured on the online platform Digital Help Desk for Cities (UN-Habitat).

2.2 Speaker 2

2.2.1 Name: Aawatif HAYAR

2.2.2 Organisation name: Moroccan Ministry of Solidarity, Social Integration, and Family

2.2.3 Type of organisation: Government

2.2.4 Title of the presentation: TBD

2.2.5 Summary of the presentation (max 200 words):

TBC - Aawatif Hayar will present the concept of "Frugal Social Smart City", which she proposed for Casablanca, Morocco, in 2019. This concept "*is based on a global bottom-up multidisciplinary approach that relies on the informational and functional cost-effective integration of various urban complex systems such as transport, health, energy, governance, etc. It puts citizens at the center of the transformation process paving the way towards a future smart sustainable cities & communities which turns societal and economic challenges into business opportunities, human development and well-being society*."[1]

2.3 Speaker 3

2.3.1 Name: Carl MÖRCH

2.3.2 Organisation name: FARI - AI for the Common Good Institute (ULB-VUB)

2.3.3 Type of organisation: Academic institutions / research center

2.3.4 Title of the presentation: TBD

2.3.5 Summary of the presentation (max 200 words):

Carl Mörch will introduce FARI, an AI, Data, and Robotics institute—bringing together 300 interdisciplinary researchers—that aims to bridge the gap between academic expertise and local organisations, including the city of Brussels and civic organisations. From working on real-life challenges to providing free courses on AI to public administrations, FARI illustrates how universities could potentially contribute to reduce the digital divide and, in return, gain more understanding of the social impact of the technologies they develop.

[1] IEEE International Smart Cities Conference, 2019

2.4 Speaker 4

2.4.1 Name: Diana MOSQUERA

2.4.2 Organisation name: Diversa Studio

2.4.3 Type of organisation: Private sector

2.4.4 Title of the presentation: TBD

2.4.5 Summary of the presentation (max 200 words):

Diana Mosquera will introduce her work at Diversa, an Artificial Intelligence and Data studio based in Quito, Ecuador. Diversa is committed to creating human-centered AI solutions that fit the needs and rights of individuals and communities. It works with organisations addressing issues, such as urbanism, gender, migration and natural resource governance. It also conducts scientific research in these areas in conjunction with universities and laboratories. One of its ongoing projects consists in using AI to quantify the safety perception of cities in the Global South according to feminist urban criteria, such as safety, autonomy, proximity, or diversity. Another one is focused on environmental sustainability and community participation for water governance in the Yaqui indigenous community of Sonora, Mexico.

3 Content

3.1 Session Abstract (max. 500 words)

In this session, speakers, representing academia, the private sector and governments from four continents, will share their knowledge about applied AI-driven urban projects. This session's primary objective will be to explore how AI can enhance the well-being of urban residents across various dimensions, aligning with Sustainable Development Goal (SDG) 11 - Sustainable Cities and Communities. This session will especially aim to show that only strong human-centered approaches, knowledge mobilisation strategies and collaboration with local stakeholders will ensure that AI is used efficiently and responsibly in/by cities. While spotlighting innovative, concrete worldwide initiatives, it will focus on defining and sharing the best practices and inspire collaborative action towards building more resilient, inclusive and sustainable urban futures. The discussions will be as practical as possible. We encourage stakeholders from all backgrounds to participate.

<u>Context and target theme</u>

Harnessing the potential of AI to foster urban resilience and sustainability is essential. A multitude of actors think of using —and sometimes already use— different AI tools to help achieve sustainability goals, from greener mobility to better pollution monitoring and energy consumption optimization, to name a few. However, cities that decide to use AI as a lever face several challenges. Innovating locally can be an intrinsically sensitive and complex process that requires the involvement of various actors (public entities, civic society organisations, private developers, researchers). Additionally, experimentations conducted by cities often stall at the proof-of-concept stage, with very few scale-ups and real-life implementations (perhaps indicating a lack of expertise in leading urban technological projects and a growing need for training players in AI and AI-related issues). To seize the potential of AI, cities will have to work closely with external experts while reinforcing their internal capacities and know-how.

This session will consist of a panel discussion between AI and/or urban experts from various sectors of society. The panellists will talk about their applied AI-driven urban projects and will share best practices on how (only when it is appropriate to do so) to use AI in an efficient and human-centric way to advance the achievement of SDGs, especially SDG 11 on Sustainable Cities and Communities. Their contributions will be as concrete as possible, in an effort to make the technical and ethical challenges of these technologies accessible to the widest possible audience.

3.2 Project Objectives

List the key objectives your session or project aimed to achieve.

3.2.1 Showcase concrete, exemplary projects where AI is used responsibly to address urban challenges, such as social inclusion, data privacy, sustainable mobility, pollution mitigation, affordable housing, or efficient urban planning;

3.2.2 Foster dialogue and knowledge exchange among researchers, urban planners, policymakers, and other civil society representatives to identify best practices and innovative approaches in leveraging AI for urban resilience;

3.2.3 Demonstrate how the discussed initiatives contribute to achieving SDG 11 by improving the quality of life in urban areas, ensuring access to basic services, promoting social equity, and enhancing environmental sustainability.

3.3 Key Themes

Main themes and topics that were covered during the session. The same ones you selected when you submitted your original session proposal. Select from the following. Maximum three

- Digital
- AI

4 Planned Impacts of the science and innovation presented in you session

4.1 Contribution to the SDGs

The SDGs provide a comprehensive framework for addressing the world's most pressing challenges and promoting sustainable development globally. Select the Goal/s that your project contributes to (max 3 SDGs)

11. **Sustainable Cities and Communities**: Make cities and human settlements inclusive, safe, resilient, and sustainable.

Throughout the session, speakers will discuss how their initiatives align with the broader goals of SDG 11, contributing to building inclusive, safe, resilient, and sustainable cities for all. They will explore diverse aspects of AI in an urban context, including:

- Inclusive urban development: Strategies to involve residents from marginalised communities in decision-making processes and urban development initiatives through AI-powered platforms.
- Data governance and privacy: Mechanisms for safeguarding personal data in AI-driven urban systems, ensuring transparency, accountability, and equity in data usage and decision-making.

- Environmental sustainability: Utilising AI-driven solutions for monitoring and mitigating urban pollution, enhancing waste management practices, and fostering the transition towards greener and more sustainable urban environments.
- Affordable housing and urban planning: Leveraging AI for data-driven urban planning processes to ensure equitable access to affordable housing, optimise land use, and create resilient and livable urban spaces.
- Smart public services: AI-based applications can improve the delivery of public services, such as education, healthcare, and administration by providing personalised information, optimising administrative processes, and proactively identifying citizens' needs.

5 Contribution to the UN Summit of the Future - **(will be enriched after the session)**

5.1 Main challenges (max 200 words)

Main challenges and difficulties experienced in implementing the science to contribute to the Sustainable Development Goals and provide recommendations to address the same whole.

n.b. This early answer is based on the project Convenor Catherine Régis will be presenting during the session. This project is called Urban AI. More information related to the projects led by the other speakers will be added here after the session.

The Urban AI project highlights several challenges in implementing AI to contribute to the Sustainable Development Goals (SDGs), particularly for vulnerable communities at the neighbourhood scale. One major challenge is ensuring that AI solutions are truly needs-centered. This requires deep community engagement, which is often difficult due to mistrust, a lack of digital literacy, and the complexities of local contexts. Additionally, there is the difficulty of integrating AI systems with existing urban infrastructure, which can be outdated or fragmented.

Ethical concerns also pose significant barriers, particularly regarding data privacy, bias, and the potential for AI to exacerbate inequalities. The responsible design and deployment of AI systems require balancing innovation with the ethical imperatives of inclusivity and fairness.

To address these challenges, the project recommends adopting a participatory approach, where communities are actively involved in every stage of AI development. There should also be a focus on building digital capacity within vulnerable groups, ensuring they have the skills to engage with and benefit from AI. Lastly, ethical guidelines should be strictly adhered to, with continuous monitoring and adjustments to mitigate any negative impacts.

5.2 Additional goals (max 200 words)

Additional goals, beyond the Goals, which are considered priorities

By showcasing innovative AI-driven projects and fostering cross-sectoral collaborations, the session also aims to:

- Inform policy and practice. It would be a welcome development if the discussions could contribute to the creation of an international community of practice between cities interested in the responsible use of AI.
- Inspire replication and scaling

- Strengthen collaboration between academia, civil society and industry
- Explore ways to empower local communities
- Enhance data governance
- Drive responsible innovation

5.3 Integration: economic, social and environmental (max 500 words)

The steps being taken to integrate the three dimensions of sustainable development (economic, social, and environmental) and share best practices where available and how activities are being designed and implemented to reflect such integration.

Economically, the different projects that will be presented emphasise the need for AI systems that can enhance local economies by addressing specific neighbourhood needs, such as improving access to essential services and resources for vulnerable populations. Socially, the projects prioritise inclusivity by involving marginalised communities in the co-design of AI solutions, ensuring that their voices are heard and their needs are met.

Environmentally, the projects are exploring ways to use AI to optimise urban infrastructure, reduce waste, and improve sustainability outcomes. This includes integrating AI into urban planning to promote energy efficiency, reduce emissions, and manage natural resources more effectively.

Best practices from the projects include adopting a participatory design approach, which not only builds trust but also ensures that the AI systems developed are relevant and effective. Additionally, most of the projects advocate for the use of open data, and transparent methodologies to foster collaboration and innovation. These practices ensure that the integration of the three dimensions is not just theoretical but is actively reflected in the design and implementation of AI-driven urban solutions.

5.4 Impact on the 2030 Agenda (max 1000 words)

A success metric for your project is primarily in how it delivers for all persons in our societies. Describe how other principles of the 2030 Agenda, for example, respect for all human rights, gender equality, the principle of Leaving No One Behind, non-discrimination, etc, have been mainstreamed in your science project.

More info on: 2030 Agenda: https://sdgs.un.org/2030agenda

Please select also the transition relevant to your science project:

(1) food systems; (2) energy access and affordability; **(3) digital connectivity**; (4) education; (5) jobs and social protection; and (6) climate change, biodiversity loss and pollution

More info on Six transitions:
https://unsdg.un.org/sites/default/files/2023-09/Six%20Transitions%20English.pdf

n.b. This early answer is based on the project Convenor Catherine Régis will be presenting during the session. This project is called Urban AI. More information related to the projects led by the other speakers will be added here after the session.

Here are the main criteria, inspired by the 2030 Agenda, that are part of the Urban AI project's roadmap to develop and deploy responsible and inclusive AI-driven solutions in urban settings, particularly for vulnerable and marginalised groups:

- Inclusivity and Participation:
    - Involve marginalised groups in the AI development process from the outset to ensure their voices are heard and their concerns are addressed.
    - Use participatory design methods to co-create solutions with the communities that will be affected by them.
    - Facilitate open dialogues and workshops to gather input and feedback from diverse community members.
- Ethical Considerations:
    - Ensure that ethical guidelines are embedded in the design, development, and deployment of AI systems.
    - Address issues of data privacy, security, and consent, especially for communities that may not fully understand the implications of AI technologies.
    - Be vigilant about the potential for AI to exacerbate existing inequalities and actively work to prevent this.
- Transparency and Accountability:
    - Maintain transparency throughout the AI development process by clearly communicating the goals, methods, and potential impacts of the AI systems.
    - Establish accountability mechanisms to monitor the implementation of AI solutions and to address any negative consequences swiftly.
    - Provide clear documentation and reporting to allow stakeholders to assess the ethical integrity and effectiveness of the AI systems.
- Building Trust:
    - Trust is crucial for the successful deployment of AI in vulnerable communities. Building and maintaining trust requires ongoing engagement and transparency.
    - Ensure that the AI systems are understandable and accessible to non-experts, particularly those within the communities being served.
    - Address any concerns or misconceptions about AI through education and awareness programs tailored to the community's needs.
- Capacity Building:
    - Equip vulnerable and marginalised groups with the knowledge and skills needed to engage with AI technologies meaningfully.
    - Offer training and resources to help these communities understand how AI can benefit them and how to mitigate potential risks.
    - Strengthen local institutions and organisations to support the sustainable deployment and maintenance of AI solutions.
- Interdisciplinary Collaboration:
    - Collaborate with experts from diverse fields—such as social sciences, urban planning, and technology—to create well-rounded AI solutions.
    - Encourage partnerships between government agencies, NGOs, tech companies, and academic institutions to pool resources and expertise.
    - Engage with local leaders and influencers to ensure that AI initiatives align with community values and priorities.
- Monitoring and Evaluation:
    - Develop clear metrics for evaluating the success and impact of AI systems on vulnerable communities.
    - Implement continuous monitoring to track the long-term effects of AI solutions and adjust strategies as necessary.

    - Use feedback loops to incorporate community input into the ongoing refinement of AI systems.
- Sustainability:
    - Ensure that AI solutions are not only effective in the short term but also sustainable over the long term.
    - Design AI systems with scalability in mind, so they can be adapted and expanded as community needs evolve.
    - Prioritise solutions that contribute to environmental sustainability and resilience, particularly in the face of climate change.
- Policy and Regulation:
    - Advocate for policies and regulations that support the responsible and ethical use of AI in urban environments.
    - Work with policymakers to create frameworks that protect vulnerable communities from potential harms associated with AI.
    - Push for the adoption of global standards and best practices in AI ethics and governance.

These criteria serve as a comprehensive guide for creating AI solutions that are not only technologically advanced but also socially responsible and equitable, ensuring that the benefits of AI reach those who need them most in urban settings.

6 Forward-looking Statement - **(to be completed after the session)**

6.1 Financial aspects

Why giving $ 1 million to your project will turbo boost the achievement of the SDGs.

Three bullets (50 words/bullet).

6.2 To further advance your science project, you will need:

Please select an option and develop it further (50 words). Multiple selection is possible.

- **Access to Funding**
- **Skilled Personnel**
- **Open Access to Data**
- **Access to Resources (**laboratory facilities, research tools, and technology).
- **Establish Partnerships and Collaborations**
- **Dissemination and Communication activities**
- **Enhance the Regulatory Environment** that supports research initiatives.
- **Access to Market**
- **Advanced Technology**

7 Conclusions (max. 300 words) - **(to be completed after the session)**

Provide a concluding summary on how science contributes to achieving the SDGs, incorporating policy recommendations.

Highlight any new or emerging issues identified during the session, suggest possible next steps or areas for further research and discussion, and outline the support needed to advance science and innovation in your field.