THE ZERO POLLUTION COMMUNICATION NETWORKS D4P WORKING GROUP

Dr Giovanni Rimassa

Vice President Digital for Planet – D4P

Chief Innovation Officer Martel Innovate

giovanni.rimassa@digital4planet.org

digital4planet.org

DIGITAL FOR PLANET

ICT FOR SUSTAINABLE DEVELOPMENT

Across several sectors - *smart energy/grids, connected mobility, smart factories, smart buildings, smart farming, smart water*, digital technologies and solutions allow for:

> More efficient use of resources

> Optimisation of processes

> Environmental impact monitoring

> Access to essential (and not only) services, e.g., education, health care...

"ICT has the potential to maintain global CO_2 emissions at 2015 levels, decoupling the past pattern where each 1% of growth in GDP equated to an 0.5% increase in CO_2 emissions, and promote sustainable growth through 2030".

SMARTer 2030, GESI

DIGITAL FOR PLANET

DIGITAL TECHNOLOGIES AND THEIR OVERCONSUMPTION ARE ALSO A BIG PART OF THE PROBLEM

Technology drives electricity demands
› Estimates show that ICT could consume 20% of global electricity by 2025, generating 5.5% of CO_2 emissions - with 25 billion "connected things" by 2021 (!)

Technology is damaging the environment
› Production, use and disposal have direct effects
› Mining rare minerals destroys natural ecosystems
› eWASTE - 53.6 million tonnes only in 2019 (!)

Technology is inducing overconsumption
› Enforcing culture of disposability
› Replacement rather than repair approach
› Software development vs. hardware upgrades

WORKING GROUPS OVERVIEW

D4P WORKING GROUPS

- Green Cloud-Edge-IoT Computing WG

- Climate-Neutral and Sustainable Smart Cities WG

- Sustainable Next Generation Internet WG

- **Zero Pollution Communication Networks WG**

... AND DIGITAL FOR PLANET IS HERE TO HELP!

TOWARDS ZERO POLLUTION NETWORKS

+ Evolution of telecommunication improved many performance metrics by order of magnitudes

+ Energy efficiency is paramount to achieve high network speed with sustainable carbon footprint

+ What matters, however, is **aggregated impact**. Energy-efficient appliances do not help with climate change if network growth eats all the gains

+ Like for other IT systems and devices, end-to-end full life-cycle impact analysis is needed

+ Work on next-gen communication network is becoming more aware of this bigger picture (e.g., relationship with SDGs in current 6G white papers)

WG GOALS AND ACTIVITIES

D4P ZERO POLLUTION NETWORKS WG

+ Explore and **engage** with the ongoing communication **network evolution**, with **sustainability**, impact management, and **pollution elimination** at the forefront

+ D4P Zero Pollution Networks WG is active on:

- Roadmap and R&I agendas definition

- Facilitate entry points for SMEs as key market players in Europe

- Engage experts and stakeholders from multiple industries and disciplines

- Inject in EU Green Deal objectives / EC policies as relevant

- Facilitate liaisons and dialogue across relevant initiatives

ZERO POLLUTION NETWORKS WG: OBJECTIVES

THREE MAIN ACTIVE GOALS

› Examine requirements, use cases, concepts for sustainable technical evolution of 5G to 6G and future communication networks.

› Consider future trends, needs, evolutions aiming to further the future of sustainable mobile communication technologies

› Include the ELSE layer in the discussion of future sustainable communications

EUROPEAN
GREEN
DEAL

AREAS OF INTERVENTION

- R&I: analyse, connect, participate

  - Cover both current and future networks

  - Energy, carbon, and overall environmental footprint for communication networks

- Contribute to the European conversation

  - Liaise with and follow the SNS partnership on the path towards 6G

  - Interact with relevant projects and efforts

- Go beyond network technical architecture

  - Engage with a wider set of stakeholders

STAY CONNECTED
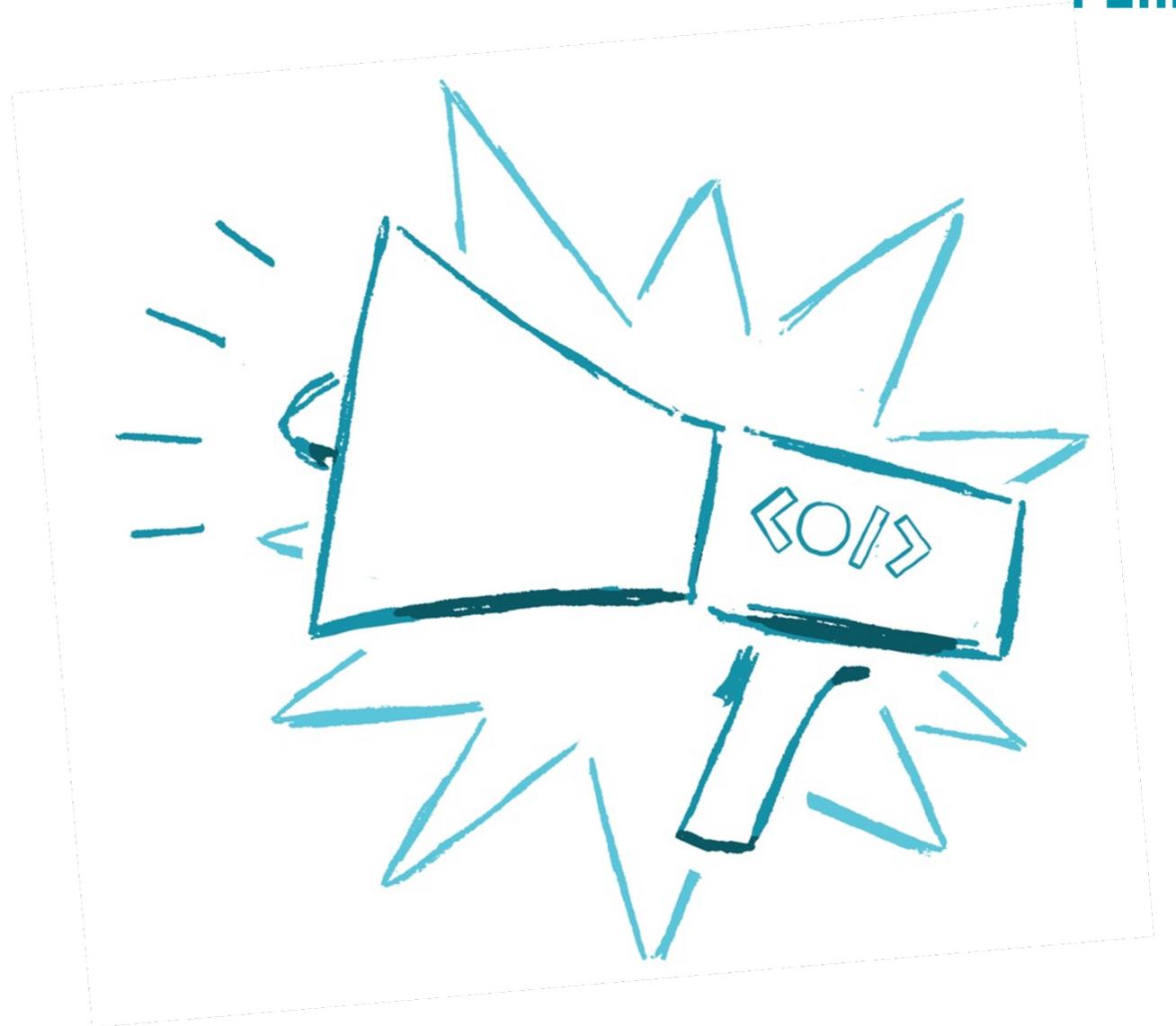
WWW   digital4planet.org

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