

### PÁLYÁZÓI TAPASZTALATOK A HORIZON EUROPE 6G SNS PROGRAMBAN

Sándor Laki, assistant professor

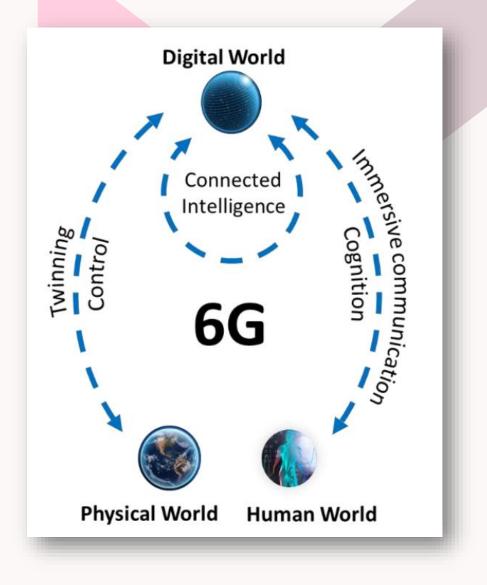
Communication Networks Laboratory Faculty of Informatics ELTE Eötvös Loránd University Budapest, Hungary



05/12/2023

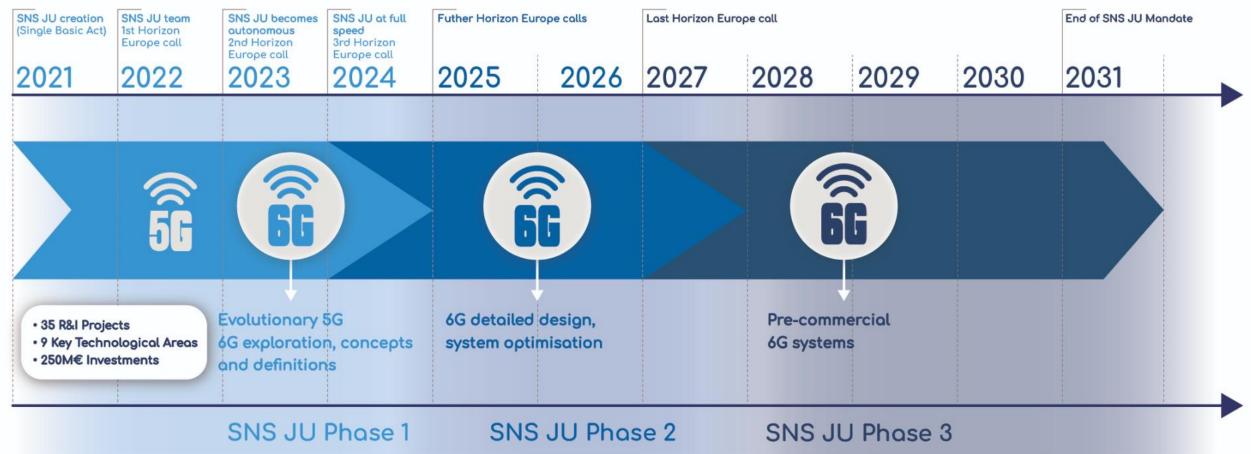
# WHAT IS 6G?

- No general globally-accepted vision on 6G
- European vision (6G-SNS)
  - Massive digitalization Phy representation
  - Connected intelligence Awareness, real-timeness
  - Network as Compute Fabric Decisions, actions
- Key values
  - Sustainability
  - Inclusion
  - Trustworhiness



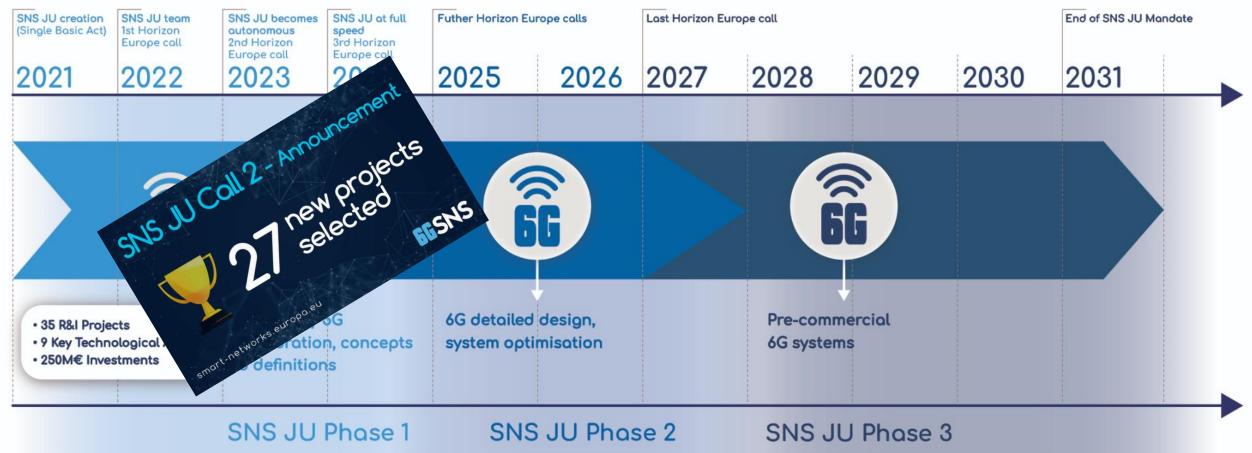
#### > D E S I R E 6 G <

# **6G SNS PROGRAMME**



DESIRE6G

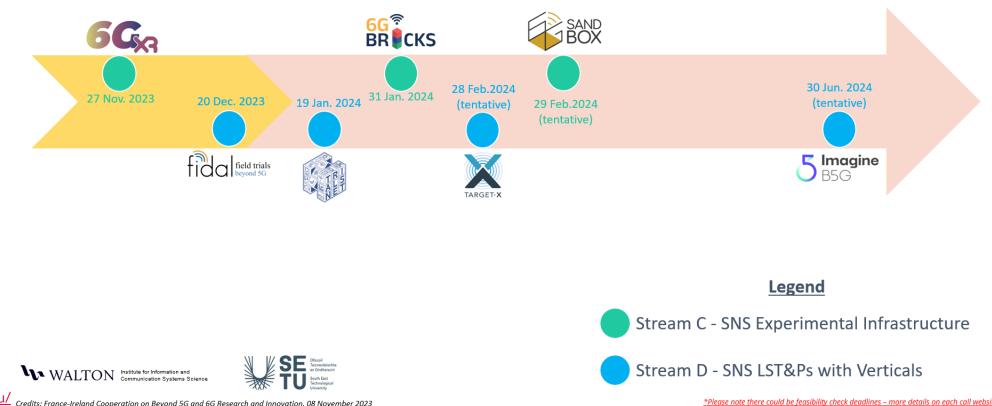
# **6G SNS PROGRAMME**



DESIRE6G

### **OTHER OPPORTUNITIES**

### Timeline showing Stream C and Stream D **Open Calls <u>deadlines</u>\***



Source: https://smart-networks.europa.eu/ Credits: France-Ireland Cooperation on Beyond 5G and 6G Research and Innovation, 08 November 2023

# **DESIRE6G**

## CASE STUDY: DESIRE6G



DESIRE6G is supported by the Smart Networks and Services Joint Undertaking. This report reflects only the author's view and the Commission is not responsible for any use that may be made of the information it contains.



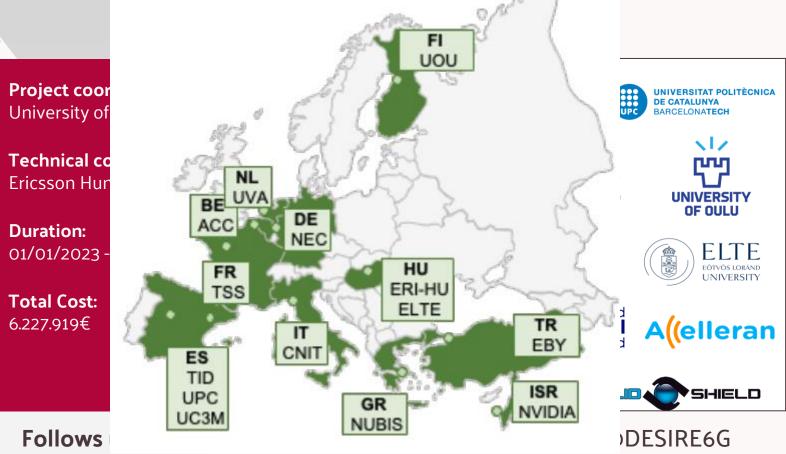
Co-funded by the European Union

### DEEP PROGRAMMABILITY & SECURE DISTRIBUTED INTELLIGENCE FOR REAL-TIME END-TO-END 6G NETWORKS



> DESIRE6G <

### DEEP PROGRAMMABILITY & SECURE DISTRIBUTED INTELLIGENCE F



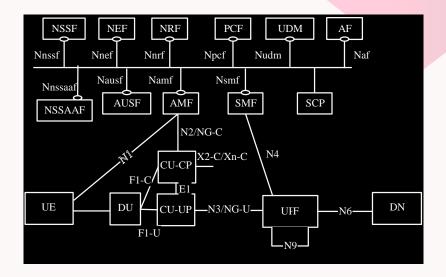
> DESIRE6G <

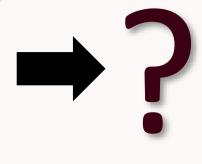
### DEEP PROGRAMMABILITY & SECURE DISTRIBUTED INTELLIGENCE F



# **ARCHITECTURAL CHALLENGES FOR 6G**

- Main questions of all architecture discussions:
  - How should the functions be grouped / split?
  - How should the interfaces and procedures look like?
- 5G was addressing complexity issues, but only with partial success:
  - "Service Based Architecture" (SBA) became heavier and less cloud-native than expected
  - User plane remained mainly node-based, no "cloud-native" evolution happened there
  - Too detailed standards, less room for vendor innovation
  - The standard does not really count on using IT frameworks/tools to simplify the architecture





#### > D E S I R E 6 G <

### **WHY DESIRE6G?**

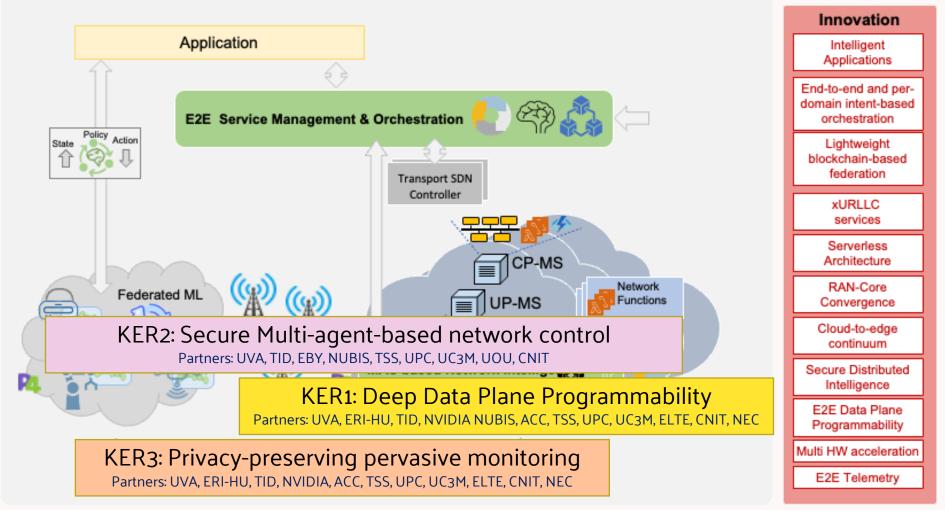
What is the difference between D6G and the other 6G projects?

We study

- How end-to-end network programmability helps in solving really challenging use cases / KPIs (such as below ms latency)
- How to solve the complexity problem of centralized control and optimization with a distributed agent-based system
- And how can we put this together as simply as possible with other innovative methods, like Al-driven telemetry, blockchain-based federation and a DLT-backed software security framework
- So D6G has a **bottom-up** view and focuses on proof of concept **demos** to validate the value proposition

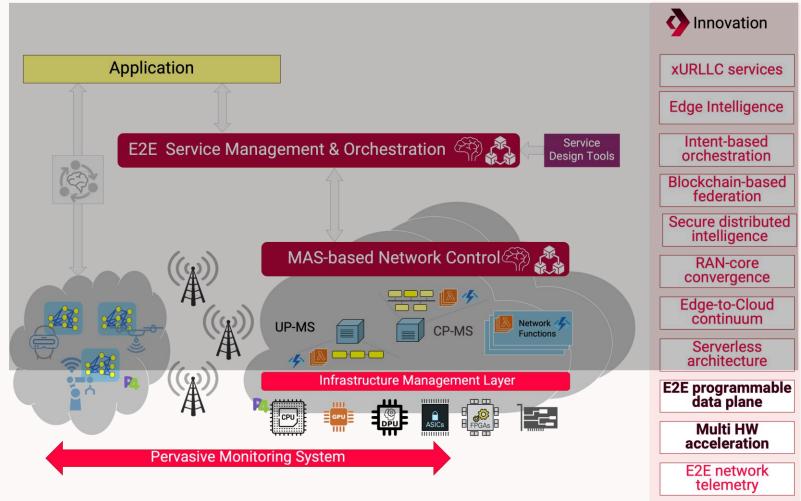
#### > D E S I R E 6 G <

### **D6G ARCHITECTURE**

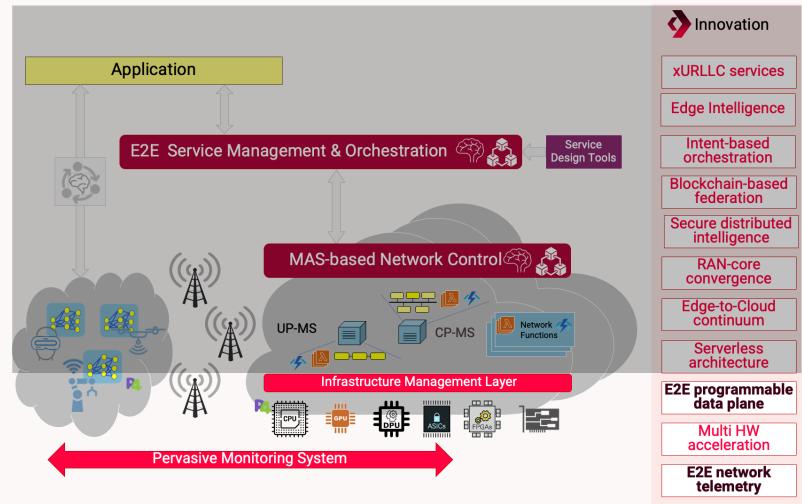


#### DESIRE6G

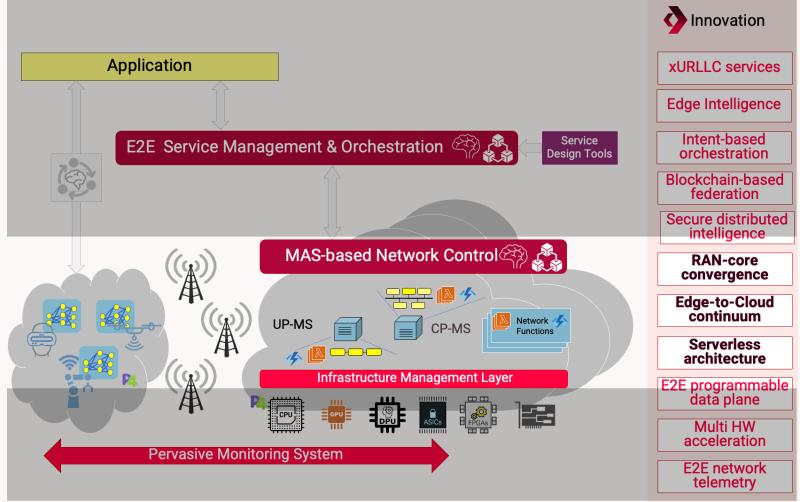
## **DEEP PROGRAMMABILITY**



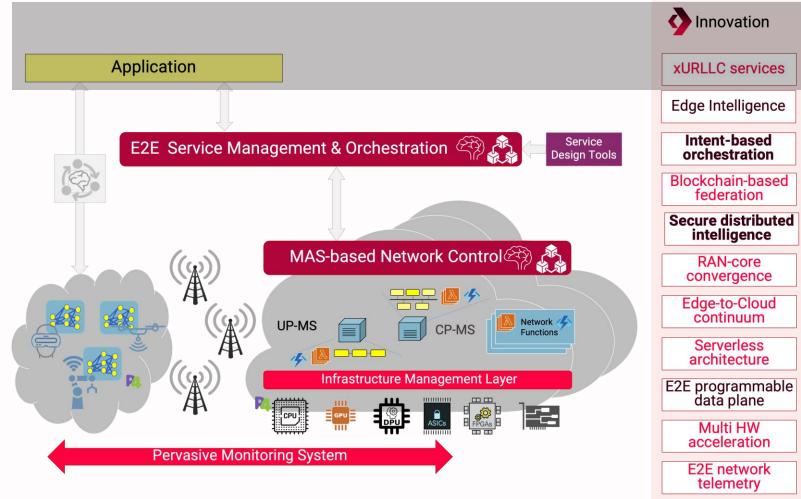
# **E2E NETWORK VISIBILITY**



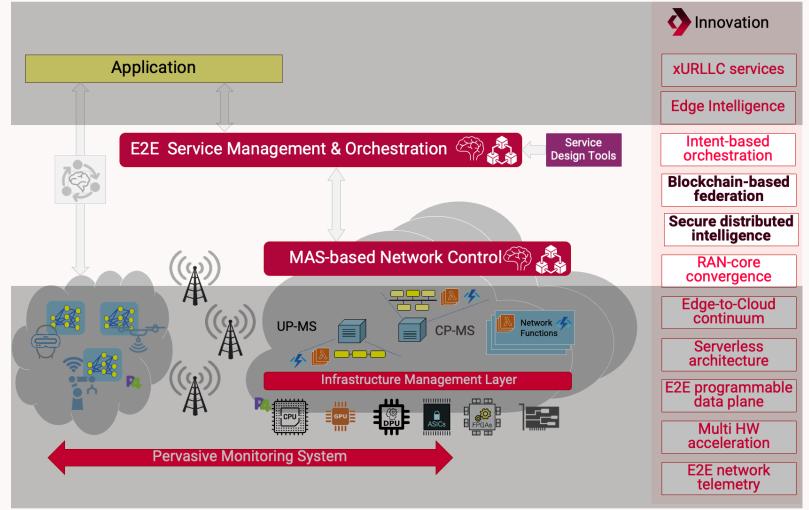
# **CLOUD NATIVE**



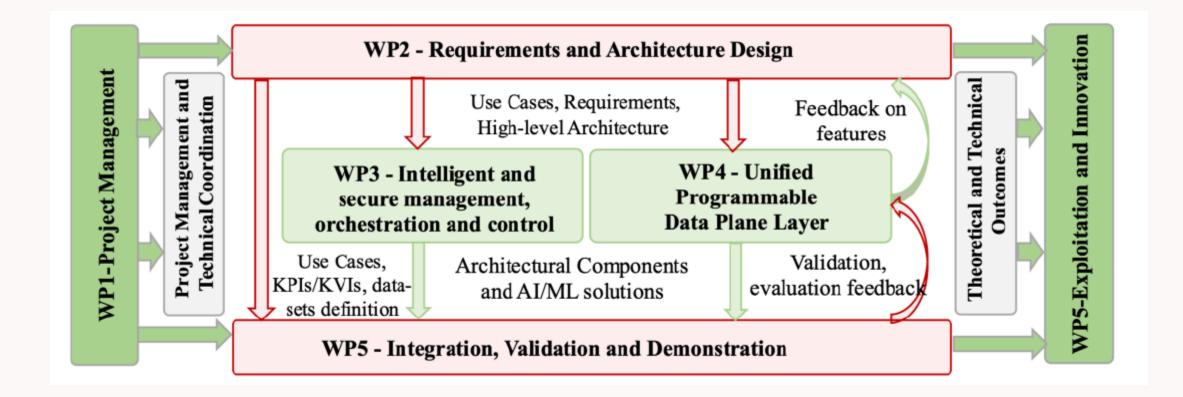
### **AI-NATIVE**



# **DLT FOR ZERO-TRUST ARCHITECTURE**



### **WP STRUCTURE**







# **THANKS!**

### Sandor Laki

lakis@inf.elte.hu





DESIRE6G has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101096466.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Commission. Neither the European Union nor the granting authority can be held responsible for them.