Barriers for AI Development

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AI for Radio Access Networks
Test and learn internally and with our partners

Mid-term activity:
• Trials with RAN suppliers and with start-ups
• Development of AI RAN management features in-house
• Collaboration with operational teams in Orange affiliate

Research activity: internal research, collaborative projects and partnerships
• How to learn online efficiently?
• How to predict accurately (both in time and space)?
• How to build a RAN which is AI capable by design?
Cognitive RAN management use case

**Operator Objectives**
- « User Throughput »
- « Network Coverage »
- « Energy Consumption »

**Cognitive network Management**

**Network/SON Configurations**

**Deployed SON Functions**

- SON₁
- ... SONₙ

- Information on the SON functions
- SON functions interactions

- Learning from interaction with the real network
- Finding Optimal Policies
- Adapting with the environment characteristics and changes
Cognitive RAN management use case
Towards an operational implementation

- Pre-training: using simulations, historic data and human expertise to avoid building strategies from scratch
- Collaborative learning and Knowledge transfer to speed the convergence and limit exploration
- Control performance degradation and ability to rollback

Tight collaboration between radio engineers and AI scientists is crucial
Barriers for AI development

- **Automation**
  - AI individual use cases
  - AI use cases integration
  - Full Network Intelligence

- **Availability and Quality of data**
- **Skills:** multi-disciplinary teams including network engineers and AI scientists
- **Trust and adoption:** technical maturity and cultural change
Thank you!

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