

3GPP TSG RAN Rel-18 workshop
Electronic Meeting, June 28 - July 2, 2021

RWS-210063

Agenda Item: 4.3

Source: Spreadtrum Communications

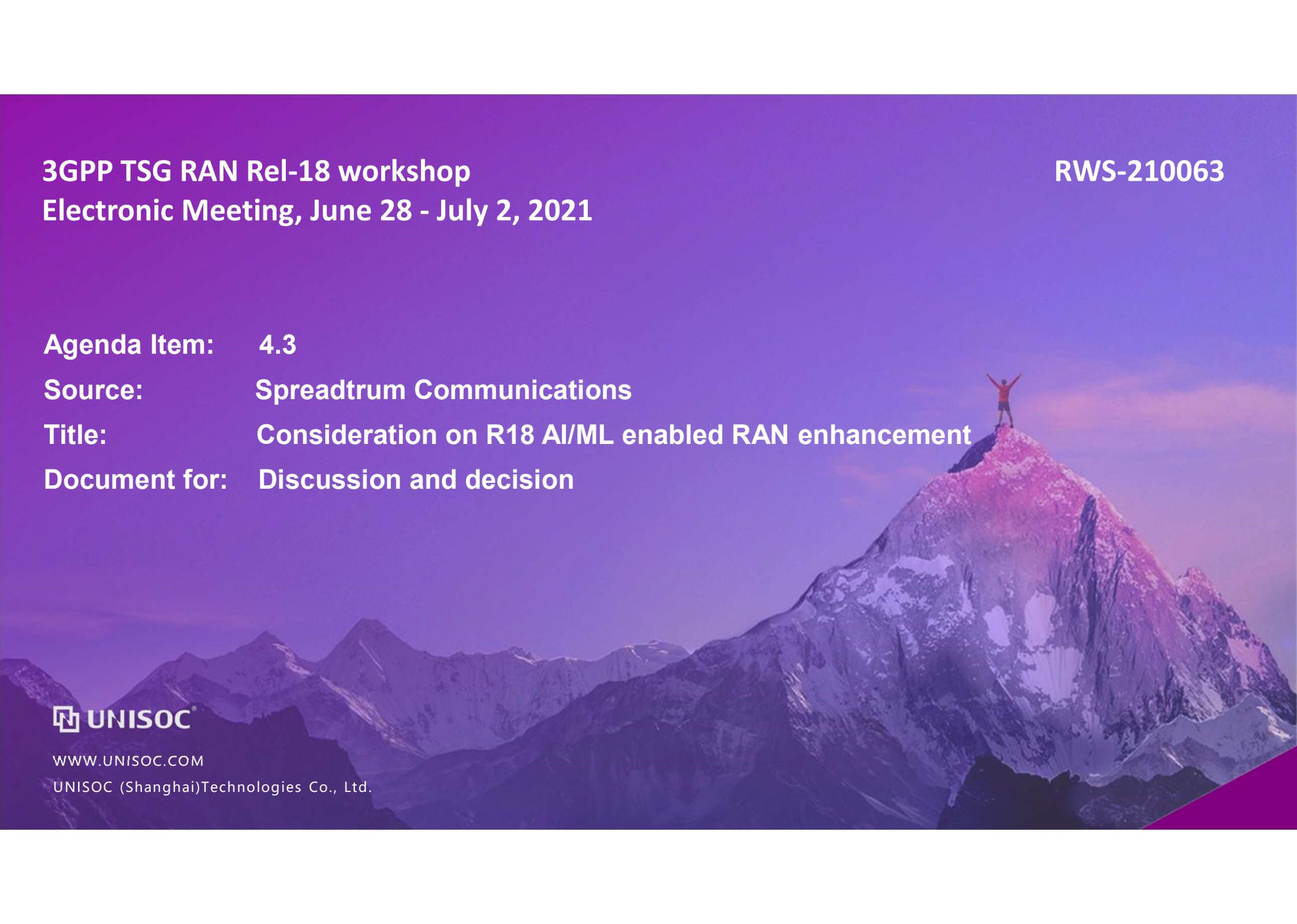
Title: Consideration on R18 AI/ML enabled RAN enhancement

Document for: Discussion and decision



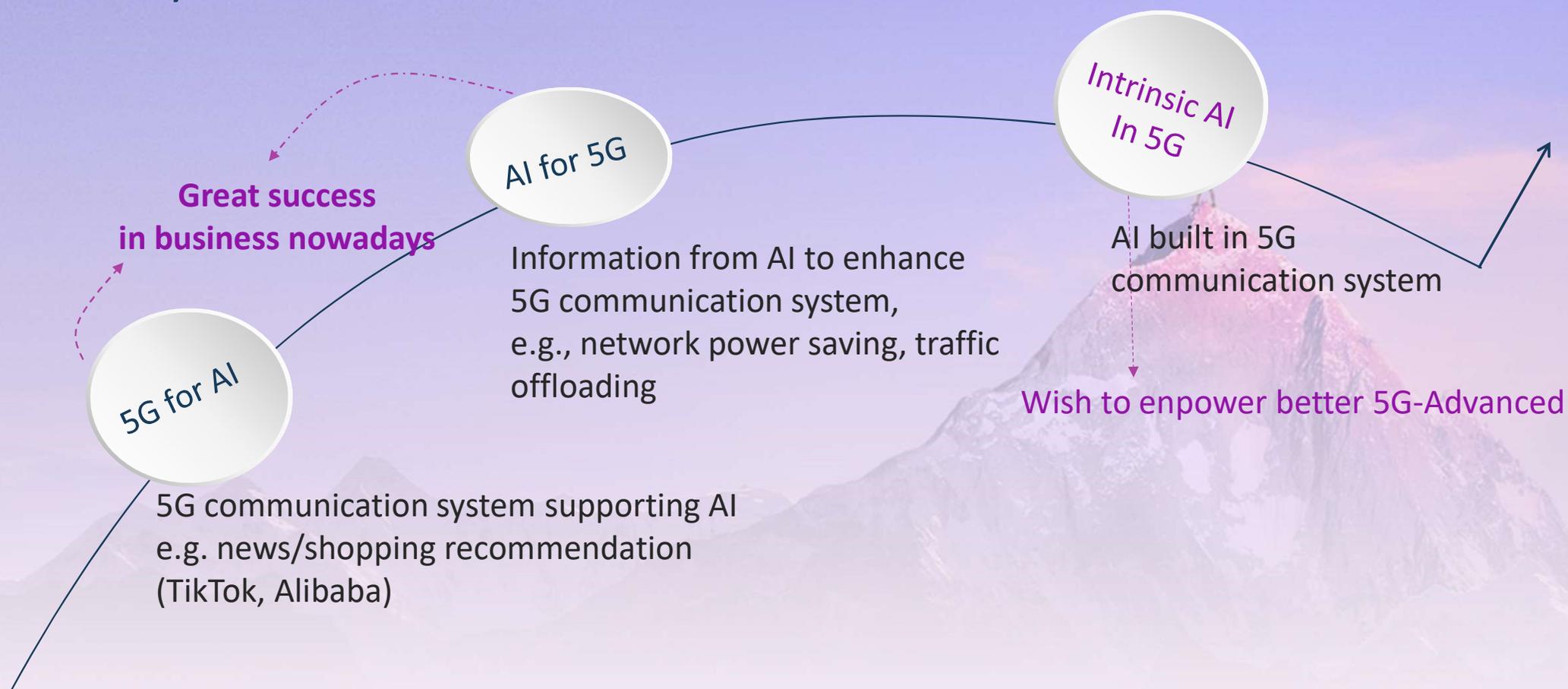
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It is time to consider intrinsic AI for 5G

AI everywhere

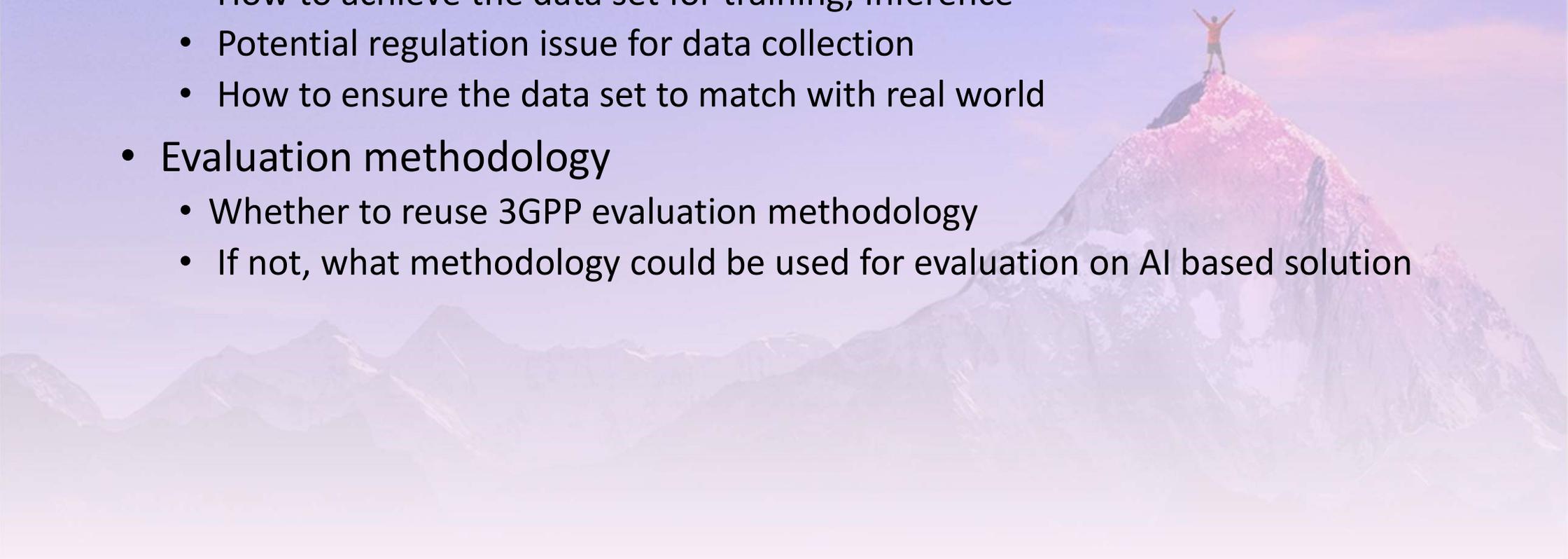


Potential use cases

- AI based CSI feedback
 - CSI information compression at UE side
 - CSI information recovery at gNB side
 - AI based Positioning
 - Exploiting more NLOS information
 - AI based channel estimation
 - Channel predication
 - RS overhead reduction
 - AI based beam management and mobility
 - Trajectory predication
 - Simplified beam management procedure
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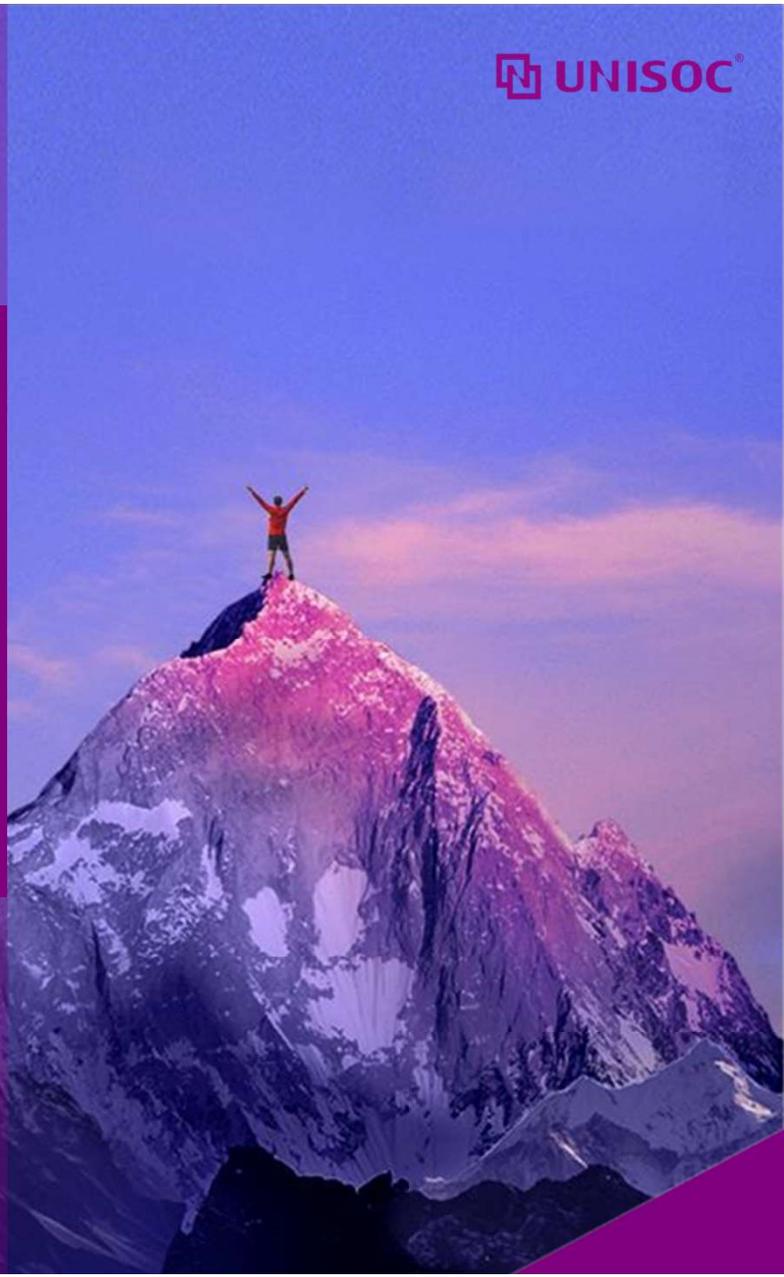
Challenges for intrinsic AI in 5G

- Data set construction
 - How to achieve the data set for training, Inference
 - Potential regulation issue for data collection
 - How to ensure the data set to match with real world
- Evaluation methodology
 - Whether to reuse 3GPP evaluation methodology
 - If not, what methodology could be used for evaluation on AI based solution



Proposal

- Study and evaluate AI enabled PHY enhancement
 - Identify use case(s) and deployment scenario(s)
 - E.g., CSI feedback, channel estimation, UL/DL RS overhead reduction, positioning, BM and mobility
 - Study evaluation methodology for AI based solutions
 - E.g., data set construction, AI model, AI algorithm, performance baseline
 - Study and evaluate the benefit and requirement in the way of case by case
 - Study potential standard impacts for use case(s) when identified to be beneficial
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A person standing on the peak of a snow-capped mountain with arms raised in triumph, set against a sunset sky. The mountain is partially covered in snow and has a pinkish glow on its peak.

Thank you

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