



# Thoth work plan in next step

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# Background



- **Mission:**

- AI has potential in creating value in terms of enhanced workload availability and improved performance and efficiency for NFV usecases. This work aims to build machine-Learning models and Tools that can be used by Telcos (typically by the operations team in Telcos).
- This project also aims to define set of data models for each of the decision making problems, that will help both provider and consumer of the data to collaborate.

- **Problem:** Lack of operator scenarios and data, also lack of ecological collaboration mechanism

- **Follow-up:** From 2022, we plan to introduce Network Intelligent Collaborative Innovation Project in Thoth, gather R&D resources in Telcos, IT, academia, etc. pull together industry to jointly build network intelligence use cases.

# Thoth work plan in next step

- **Network Intelligent Collaborative Innovation Project**
- Other works in Moselle Release

# Background-Introduction of Intelligent Networking



- **What is Intelligent Networking?**

- A network empowered by AI technologies and systematic integration of AI and communication network on hardware, software, systems and processes to realize lower cost, higher efficiency and agile business.



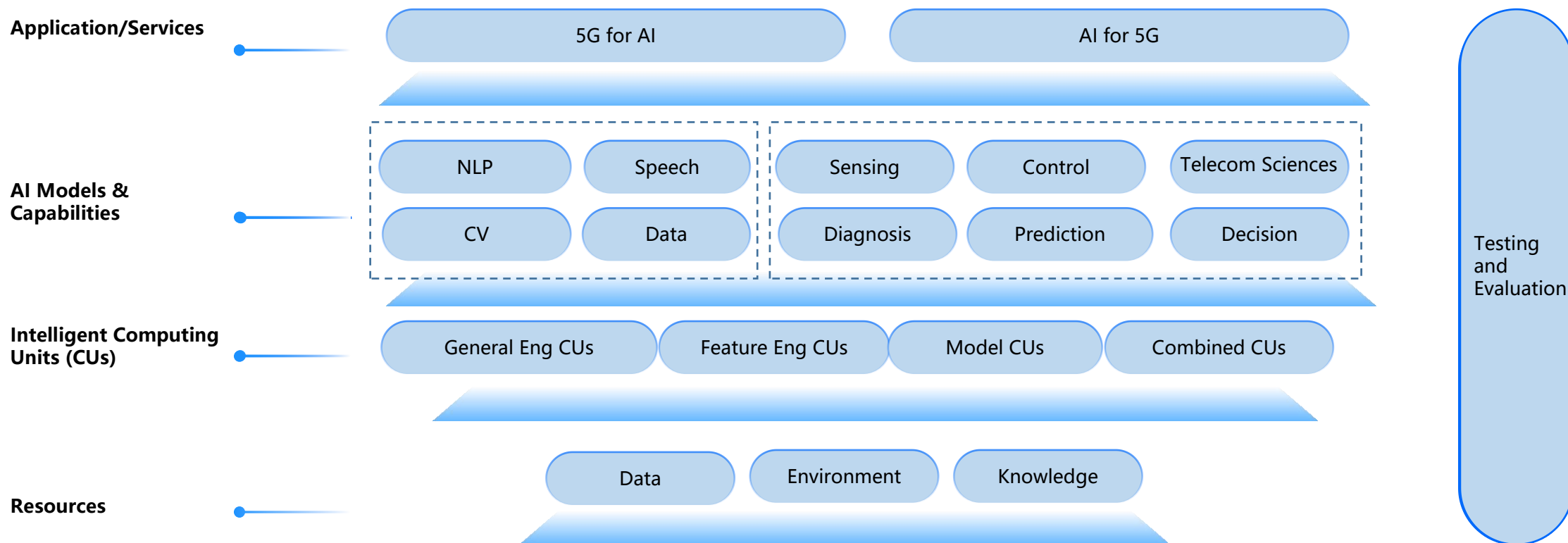
- **What is Intelligent Networking Ecosystem?**

- Through open source and standards organizations, jointly build intelligent network ecosystem, share network intelligent R&D resources, define industry standards, and provide open source reference implementations.



# Action for Building Intelligent Network Ecosystem

- The current bottleneck problems of network intelligence technology include data, algorithms, etc.
- In order to solve these problems, LFN Board Chair -Dr. Junlan Feng proposed at LFN ONEEF that it is better to connect industry organizations in LFN, establish joint working group for open source network innovation.



# Action for Building Intelligent Network Ecosystem- Network Intelligent Collaborative Innovation Project



- **Goal:** Gather operators, vendors, research institutions, etc. to share model scenarios and data/R&D resources according to common network intelligence requirements of industry, jointly construct network intelligence algorithm models, then create network intelligence collaborative innovation ecosystem.
- **Project Works:**
  - (1) **Platform:** Used to submit, store and maintain network intelligence scenario description files, data, and models
  - (2) **Use case scenario:** Collect and review network intelligence scenario requirements
  - (3) **Model:** Network intelligence scenario model R&D
  - (4) **Data:** Network intelligence dataset construction
  - (5) **Evaluation:** Network intelligence scenario model evaluation and ranking



- According to reqs of algorithm model co-construction of the network intelligent collaborative innovation project, develop and open Git platform (repo) .

*(Plan to open in July)*

- **Platform capabilities**

- Scenario requirements description submission and storage
- Scenario resources storage (include data, evaluation programs, etc.)
- Model submission and storage
- Model evaluation result ranking
- Review and open scenarios, resources, evaluation results

- **Call for contribution:** Responsible for building project platform on GitHub or GitLab, daily manage and maintain the platform

- **Contributors: ?**

# Network Intelligence Scenario Requirements Management



- Collect network intelligence scenario requirements from operators, and organize scenario reqs review, submission and launch (the first round of reqs launch will be completed in July).
- **Call for contribution:**
  - (1) Responsible for regularly collecting operators' network intelligence scenario requirements.
  - (2) Review whether the resources required for the development of scenario models are sufficient.
  - (3) Organize the scenario requirements online and launch at the platform.
- **Contributors:** Lei Huang、 Sridhar、 Others?



# Network Intelligence Scenario Model R&D



- According to the AI technologies researchers are good at, develop and submit models to the platform repo
- **Call for contribution:**
  - (1) Moselle release scenario model development, including Failure Prediction, Log Analysis
  - (2) Model R&D for network intelligent collaborative innovation project scenario requirements
- **Contributors:** Rohit, Girish, others?

# Network intelligence dataset construction



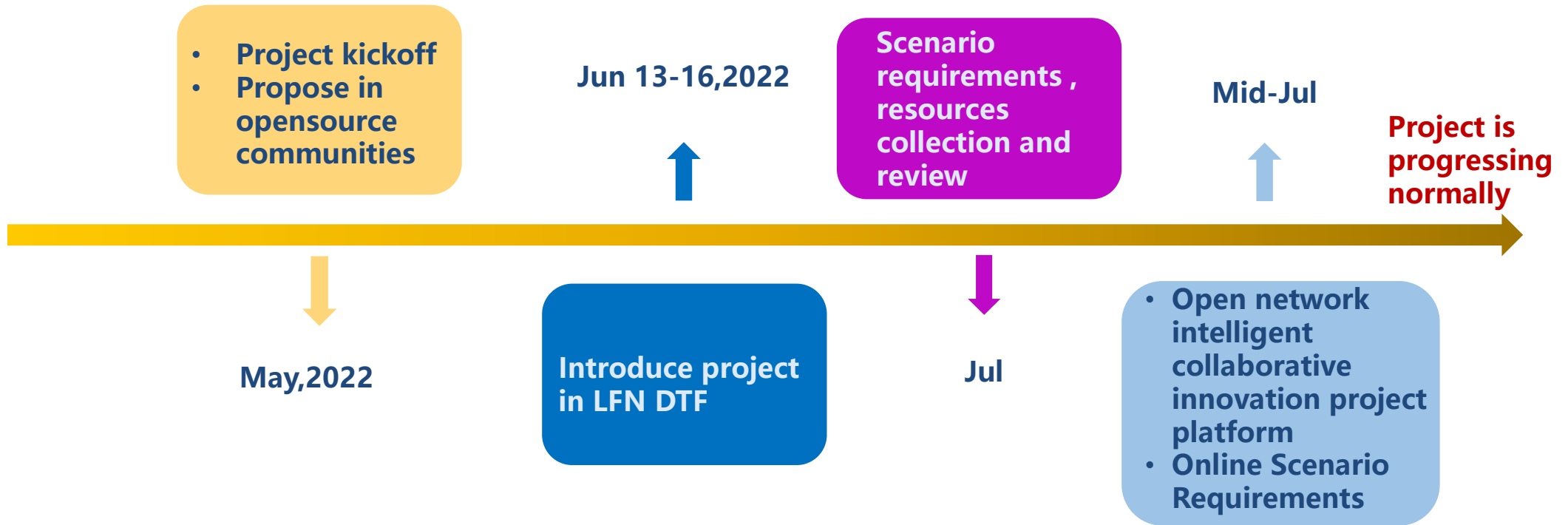
- According to the reqs of network intelligence scenarios, realize the construction of network intelligent data set
- **Call for contribution:** Scenario requirements bring data, and jointly build network intelligent scenario dataset
- **Contributors:** ?

# Network Intelligence Scenario Model Evaluation



- Responsible for model evaluation and ranking based on network intelligent scenario model results
- **Call for contribution:**
  - (1) Call profile scripts periodically
  - (2) According to the results of the evaluation script, publish model effect ranking result
- **Contributors: ?**

# Project Timeline



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- Network Intelligent Collaborative Innovation Project
- **Other works in Moselle Release**

# Data Generation- Using GANs

- Data generation model exploration: ITU competition - GANs algorithm
- **Status and plan:** Sample data has been generated, plan to check with ITU in mid-May
- **Contributors:** Kai Lu、 Lei Huang、 Sridhar



# Development of Tools



- Data anonymizer and other tools research and development work
- **Contributor:** Sridhar

# Call for Participation



- Thoth Weekly Meeting Time: Every week on Friday, 1300 UTC
- Zoom Link: <https://zoom.us/j/96163911066>
- Contact: [huangleiyjy@chinamobile.com](mailto:huangleiyjy@chinamobile.com)



# Thank You