XGVela

-- A 5G Cloud Native PaaS

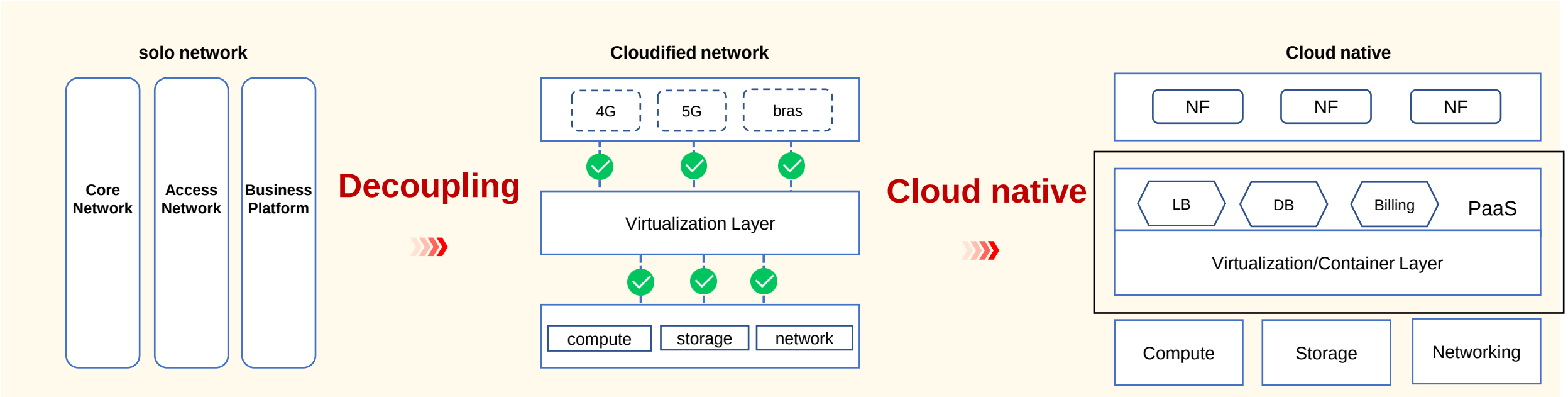
2020.04

Why XGVela?

XGVela | Operators' network transformation

- ✓ With the help of NFV, SDN and orchestration management technology, current operator network is transforming from the traditional hardware and software equipment to the layered and decoupled cloud network.
- ✓ In the future, thanks to the application of container, microservice and other technologies, it will eventually evolve into the cloud native network

Operators' Network Transformation



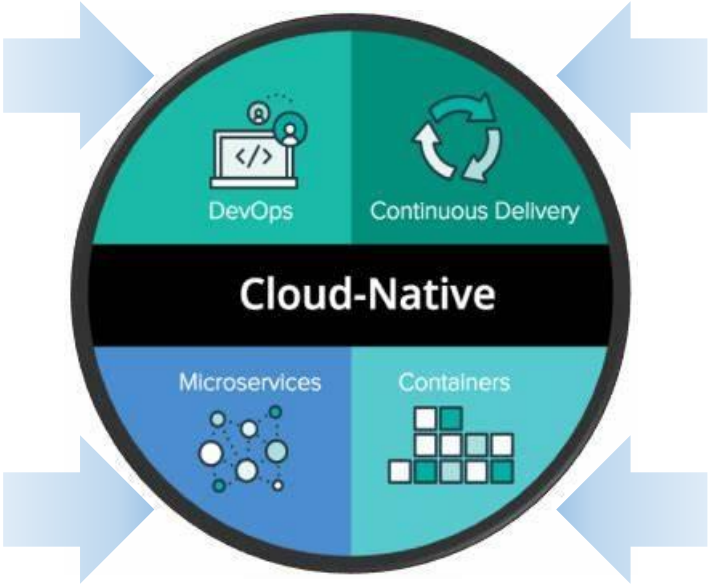
XGVela | Why need cloud native telco platform

Fast-paced change in 5G requirements

- High flexibility in 2B scenarios
- Quick function upgrade
- Agile capabilities release

VM platform is inadequate

- Guest OS cumbersome
- Low deployment density
- Slow start and stop of virtual machine



Open & healthy eco-system

- Reduce barriers to enter the telco-industry
- Introduce healthy competition
- Expand and prosper the ecosystem
- Reduce the cost on network construction

Autonomous control of XGVela

- Carefully selected common services from NE to platform
- Standard APIs to provide capabilities
- Application development focus on service logic

XGVela Concept

XGVela | What is XGVela?

- **XGVela is an open source cloud native PaaS for applications and telco network functions, which is to enable new services and help mobile operators to seize the business opportunity from vertical industries in the 5G era**
- **Vela stands for sail in Latin, and also it is the name of a constellation. With XGVela, a PaaS platform with telco features can be used to accelerate the design, development and innovation of telco related service design.**

Core Idea

Cloud Native

Target object

5G Network Functions

Design Principle

Micro service Architecture

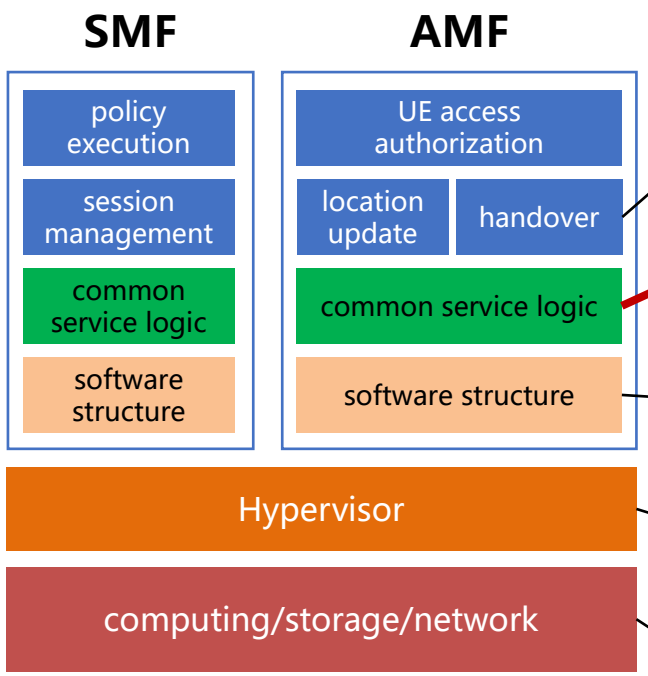
Technology Stack

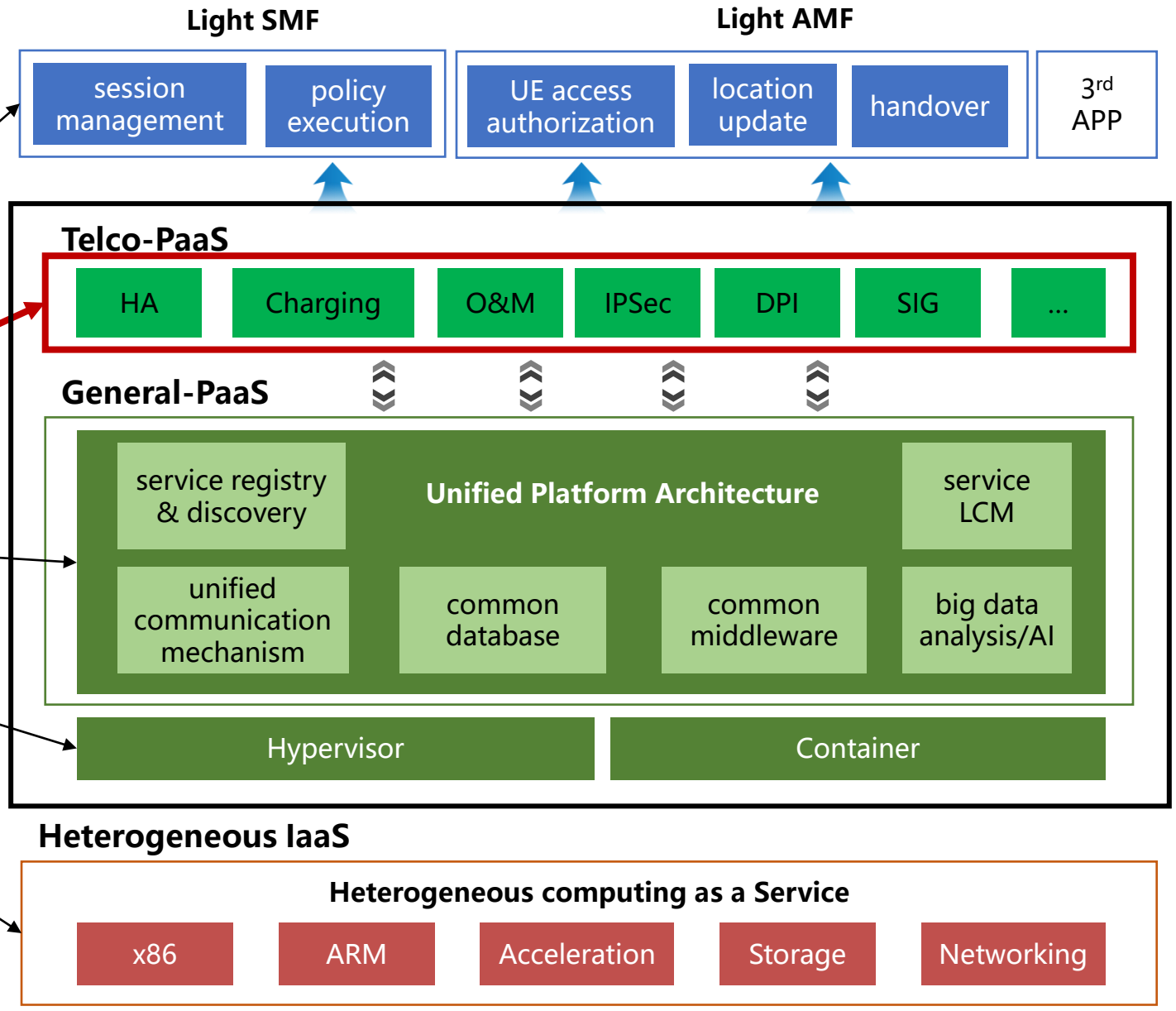
Container

XGVela | How to achieve XGVela?

1. Application tailoring:

- The network elements are further decomposed according to the microservices architecture
- Strip away the parts that have nothing to do with the application itself



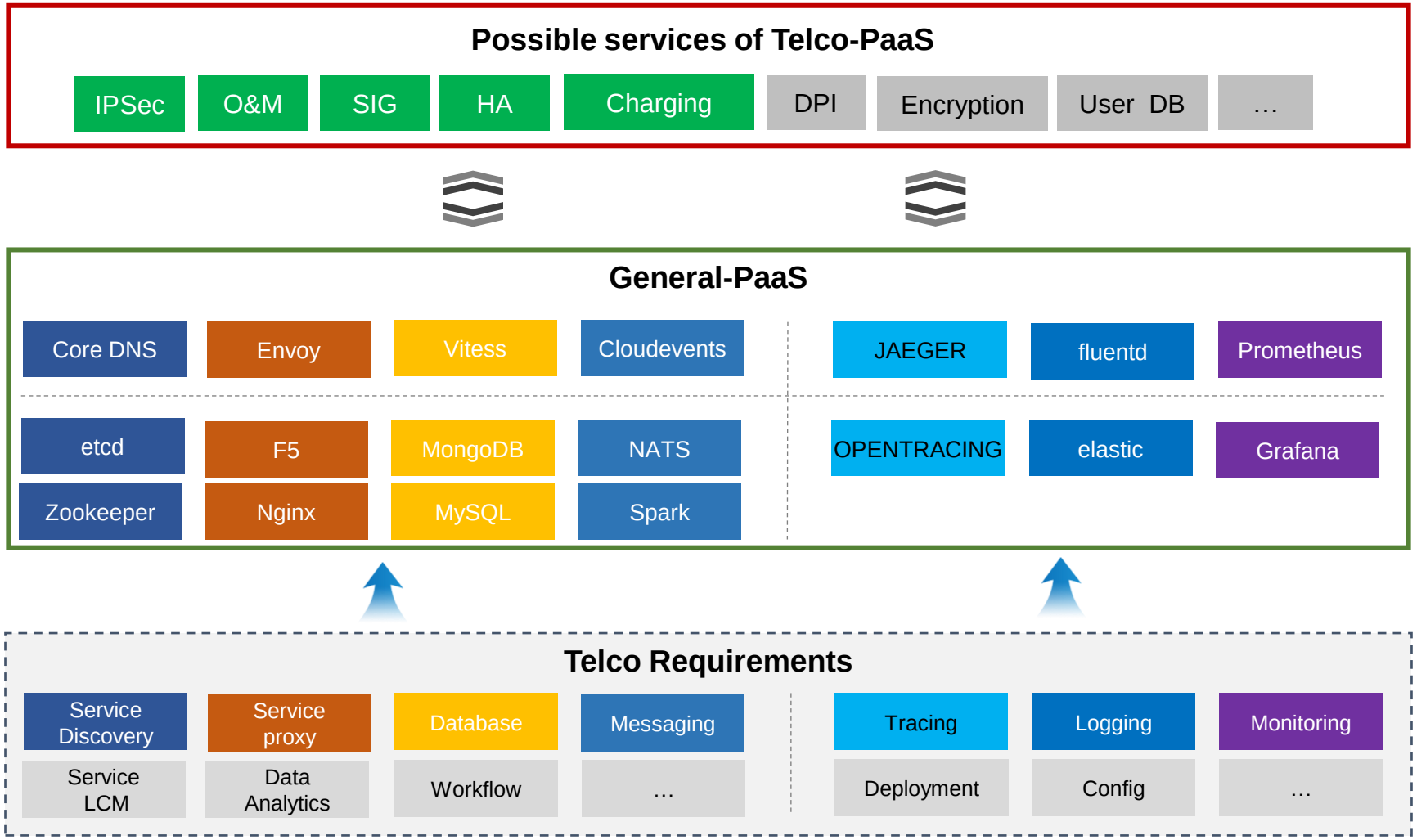


2. Platform addition:

- Support the coexistence of multiple resource forms
- Based on network element software architecture, the implementation of the general service rely on the platform
- Provides unified capabilities through API

XGVela | Details

- **XGVela integrates CNCF projects based on telco requirements to form General-PaaS. Telco enhancement requirements will be explored.**
- **XGVela studies 5G NF microservice design method, develop and integrate Telco-PaaS**



XGVela Overview

XGVela | Community Scope

Document

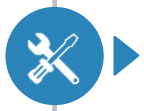
- Reference doc for cloud native network function and service design
- XGVela requirements doc, architecture doc, etc.
- XGVela platform User Manual

Development

- Telco PaaS (Functionalities, APIs, etc.)

Integration

- General-PaaS & Telco-PaaS



Testing

- XGVela with K8S (open source version, different vendor version)
- XGVela with cloud native NF

Certification

- Commercial product certification

XGVela | Relationship with other Communities/Originations

Ref Standards

3GPP A GLOBAL INITIATIVE

ngmn the engine of wireless innovation

CNTT

Standards and reference docs related to cloud native are inputs for XGVela

- 3GPP—Cloud native NF design
- NGMN—5G cloud native telco network requirement
- CNTT—K8S & container platform requirement

PaaS & Platform

CLOUD NATIVE COMPUTING FOUNDATION

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- PaaS projects from CNCF and other open source projects are **inputs for XGVela code & integration**
- XGVela tests and concludes gaps between current PaaS projects and telco requirement, **upstream telco PaaS enhancement requirements**

Orchestration

kubernetes

ONAP

- XGVela cooperates with orchestration projects to **achieve dispatch of PaaS abilities and orchestration of cloud native NFs**

Integration & Testing

OPNFV

AKRAINO EDGE STACK

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- XGVela as a PaaS platform to be integrated with integration projects
- **Cooperate with OPNFV CNTT RI of container & K8S platform** to output a reference platform to support running and developing cloud native NF
- **Cooperate with Akraino to output telco cloud native best practice**

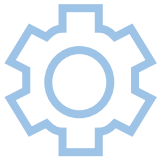
XGVela | Community Goals

Accelerate cloud Native evolution

Gather efforts from all operators and vendors to promote cloud native evolution in telco industry

Instruct network element design

Form principles and guidance in network element design based on microservice architecture, for example: to separate business logic modular and protocol processing modular



Extract common telco features

Extract common telco features in network element design and implement them as reusable functions/services

Reduce development complexity

Existing tool set for network element design

XGVela production-level code

Implement XGVela as a deployable PaaS platform, support LCM and development of cloud native network element, act as reference platform

Unite standards and open source organizations

Provide standard implementation, reduce effort in cross-vendor integration

Expand cloud native vendor ecosystem in telecom industry

TBD…

XGVela | Technical Scope

CNF Design

Container/ Microservice based VNFs

Telco cloud features

Specific telco feature requirements on cloud native compute, network, storage, security and etc. to support cloud native VNFs

Telco PaaS services

Common telco PaaS services extracted from cloud native VNF implementation, and other PaaS capabilities

Orchestration, Network and etc.

Cooperation with modular other of open source communities such as Kubernetes, ONAP, ODL and etc.

APIs and procedures

Overall APIs and procedures of using XGVela, such as creating cloud native APIs, calling specific PaaS services

TBD…

XGVela | Roadmap

2020

Open source project: establish working group & clarify project goals

- *Apr 30*, launch as LF project
- *Aug*, establish a project under LFN
- *Dec*, release the 1st version of platform

Testbed

- Build a prototype of cloud native telco-platform

2021 - 2022

Open source project

- Complete general PaaS definition
- Drive vendors to complete prototype development

Testbed

- Introduce interworking of different vendors in the prototype

2022 - 2023

Open source

- Complete telco PaaS definition

Pilot test

- Build telco platform for operators

XGVela | Join XGVela

Question 1: Where can I find more info about XGVela?
Answer: Website and Github page are coming soon.

Question 2: How do I join this community?
Answer: XGVela is a unfunded project under LFN. Companies that have already joined LFN can join XGVela directly. Individuals can join as long as you are interested in this project.

Question 3: Who can join this community?
Answer: Anyone interested in cloud native evolution in telco industry: operators, cloud providers, NF providers, suppliers, developers, etc.

Question 4: How can I contribute?
Answer: You can contribute to XGVela from now on, at the very beginning of this project. Contributions can be docs, codes, testbeds, etc. Contact us as long as you have ideas: zhaoqihui@chinamobile.com .

Thank you