

The OpenEdge Project

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Outline

- Profile of OpenEdge Project
- Architecture
- Roadmap and Upcoming release feature
- Application PoC 1
- Application PoC 2
- OpenEdge in Education

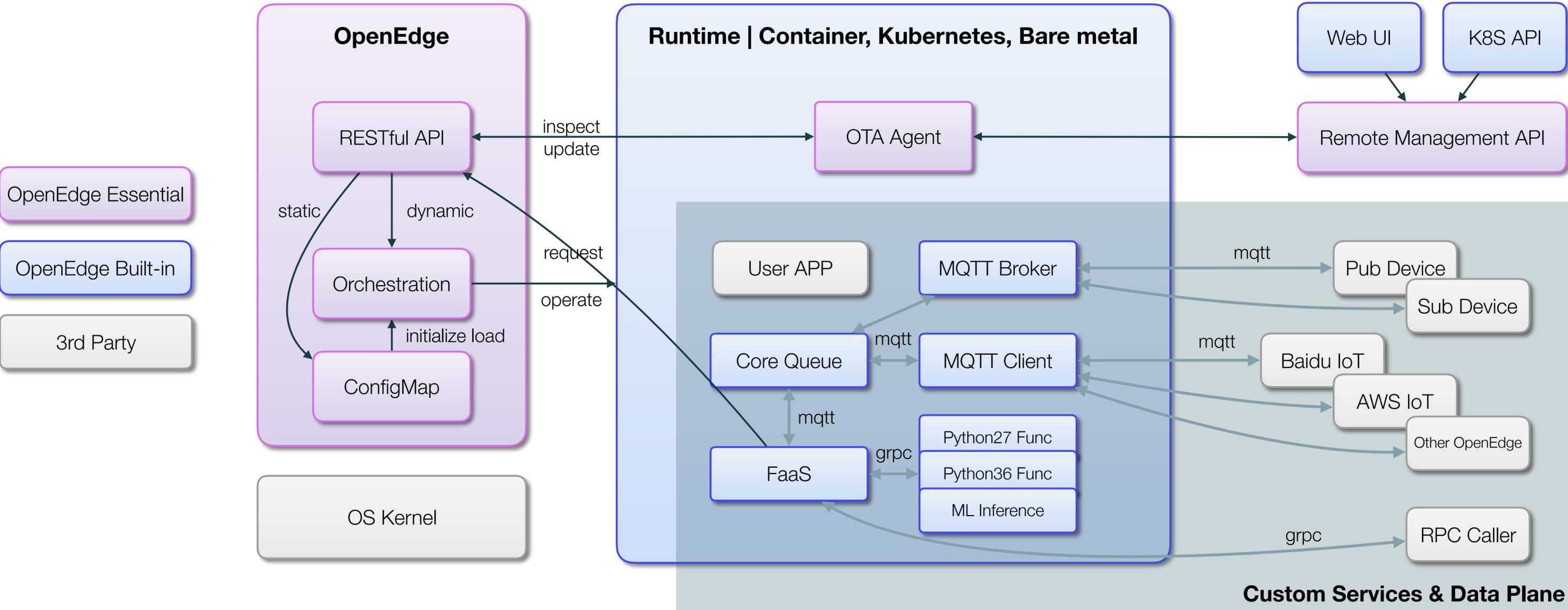
OpenEdge, Open Source

- <https://github.com/baidu/openedge>
 - Moving to [openedgetech/openedge](https://github.com/openedgetech/openedge) in next release
- First release in Dec. 2018
 - 4 Releases
 - 12 Contributors
 - 900+ stars on github.com
- Focus
 - Cloud Native infrastructure on Edge
 - Large-scale mgmt of unattended equipments
 - Toolkits & services for creating applications
- Vision
 - Edge Operating System
 - Edge Toolchain for Developers
 - Cloud, Edge and IoT data collaboration

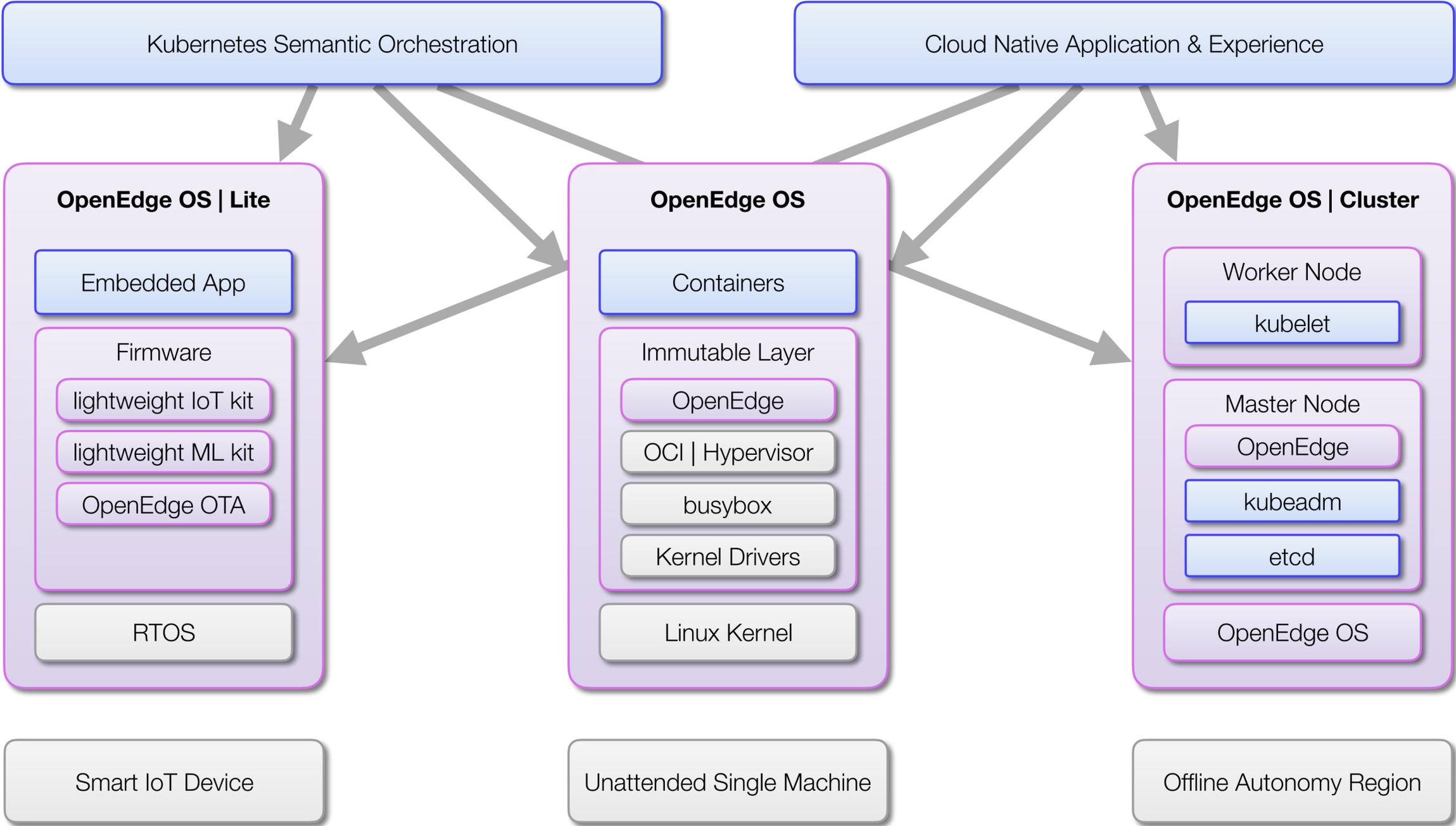
The screenshot shows the GitHub repository page for `baidu / openedge`. At the top, there is a blue banner with the OpenEdge logo and the tagline "OpenEdge, extend cloud computing, data and service seamlessly to edge devices". Below the banner, the repository name is displayed along with statistics: 65 watchers, 962 stars, and 169 forks. Navigation tabs include Code, Issues (30), Pull requests (2), Projects (1), Insights, and Settings. A description of the project is provided, along with a list of topics: edge-computing, container, micro-service, functions-as-a-service, iot, golang, mqtt, docker, and faas. A summary bar shows 438 commits, 1 branch, 4 releases, 12 contributors, and Apache-2.0 license. Action buttons for "New pull request", "Create new file", "Upload files", "Find File", and "Clone or download" are visible. The commit history table lists recent changes, including updates to templates, FAQs, and various code modifications.

Commit	Message	Time
sherlockblaze and wangxiaochen04	modify release note (#250)	8 days ago
	update some error and bug report template	4 months ago
	add FAQ & fix url error & modify makefile for release & add manifest ...	2 months ago
	bugfix (#227)	13 days ago
	Add code of conduct (#228)	13 days ago
	modify release note (#250)	8 days ago
	modify docs focusing on updating python27 to python3 (#221)	13 days ago
	refactor info and stats collcation (#207)	a month ago
	support args in docker container mode (#244)	11 days ago
	change the interval config of stats report of agent module from 1m to...	9 days ago

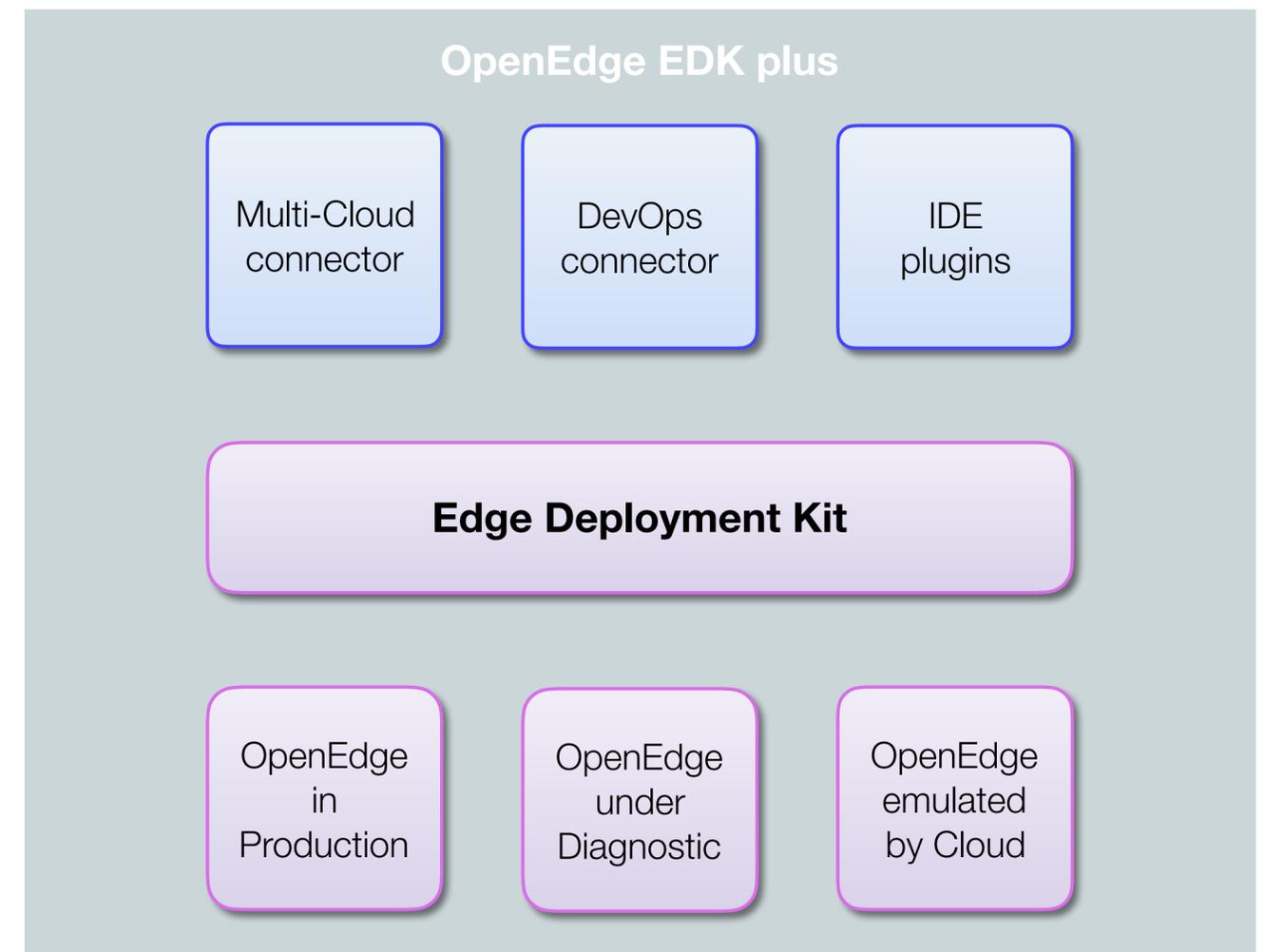
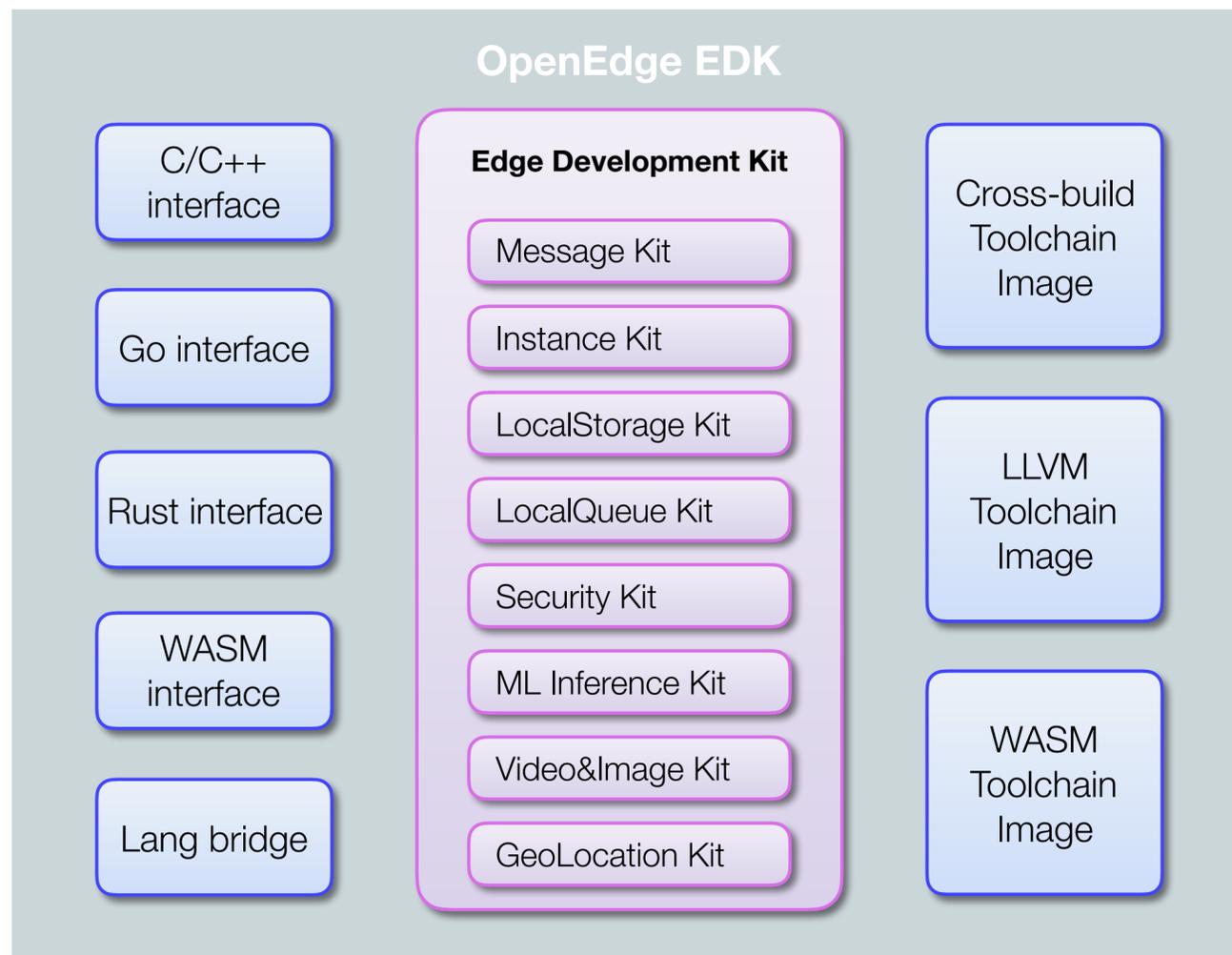
Architecture



Roadmap: Edge Operating System

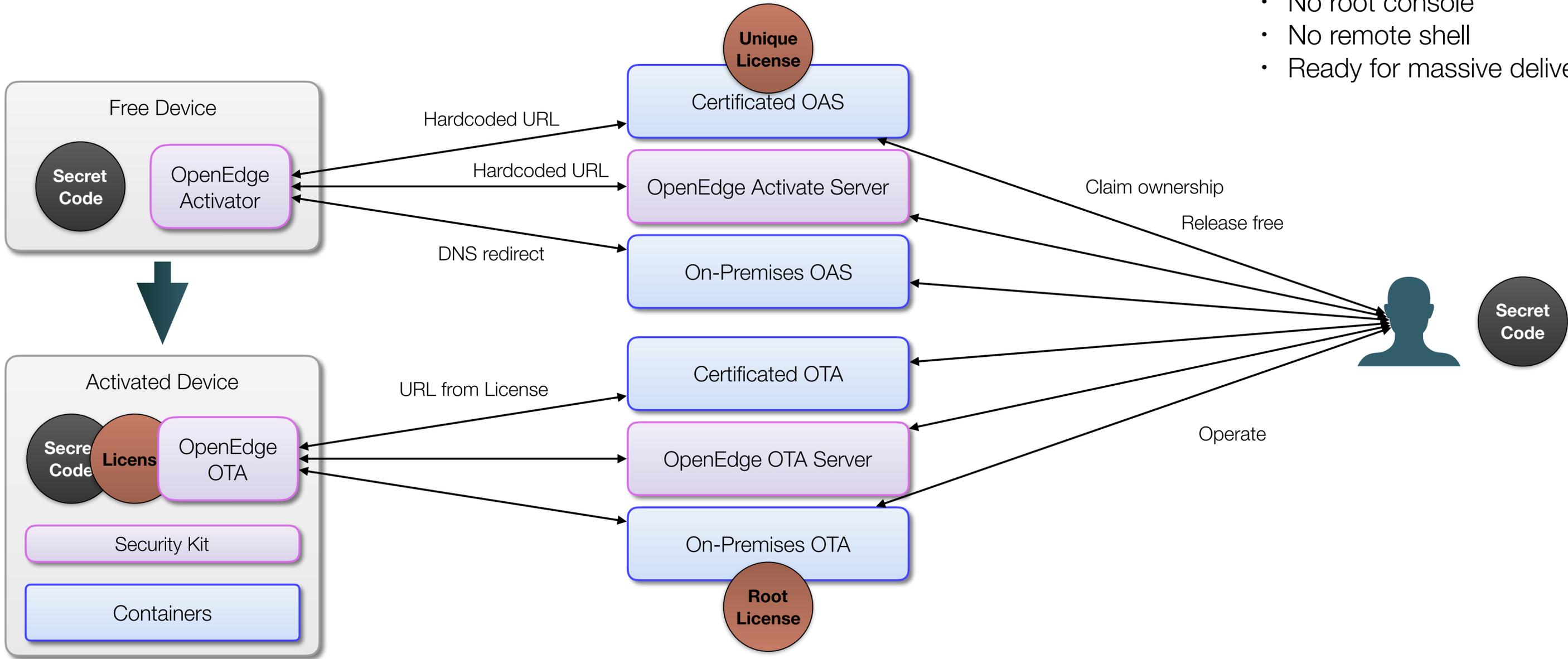


Roadmap: Edge Toolchain for Developers



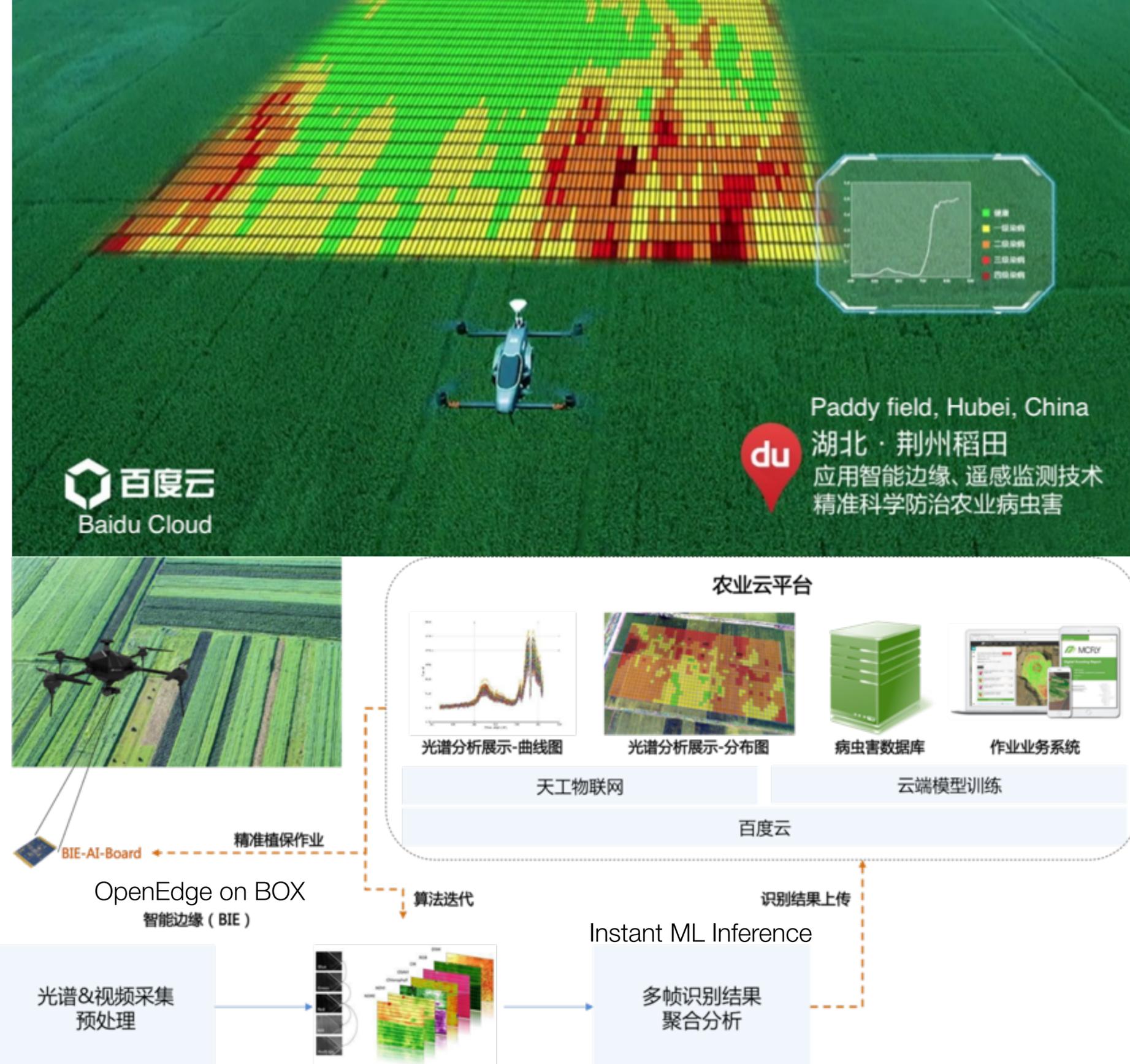
Upcoming: Device Activation and End-to-End Security

- No password
- No root console
- No remote shell
- Ready for massive delivery



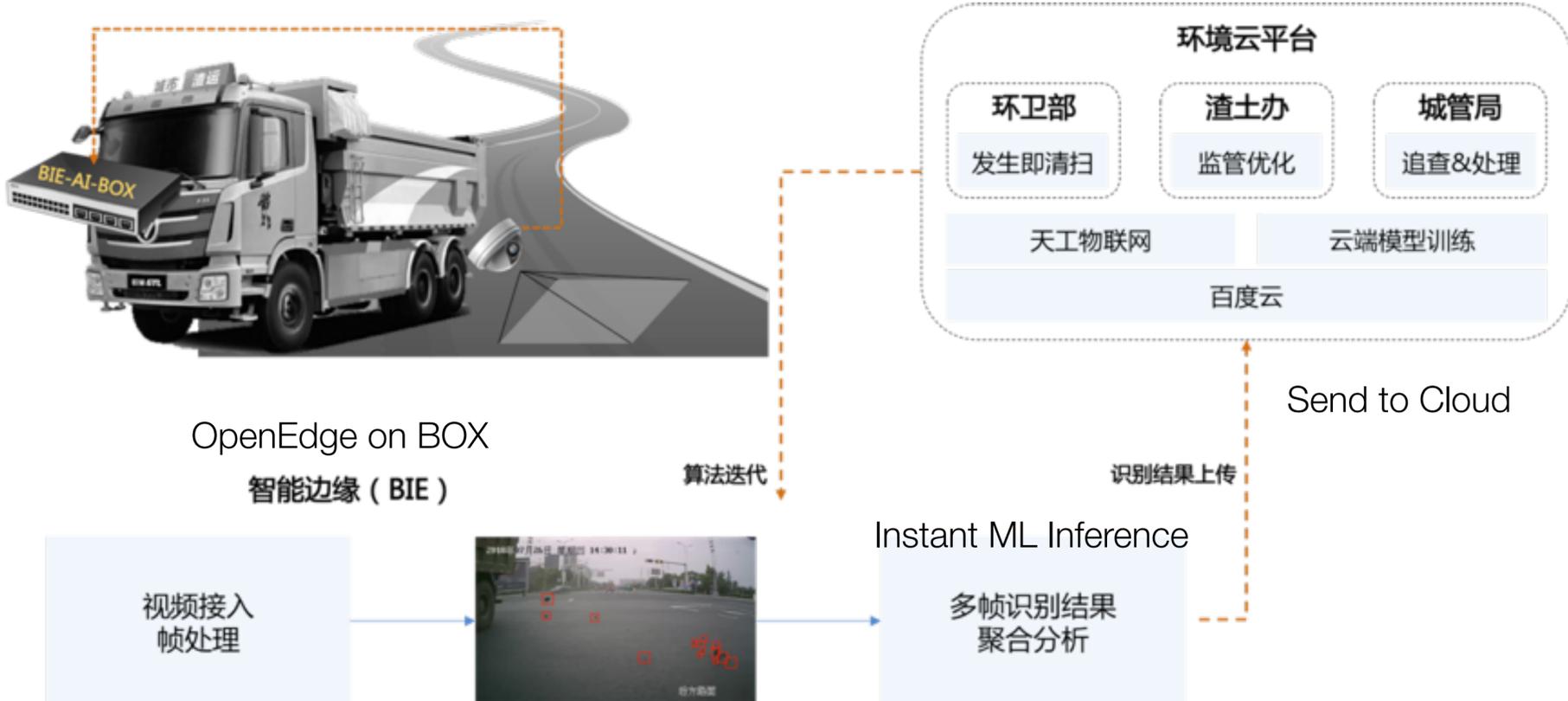
Application: Real-time monitoring and crop protection

- Background
 - Intelligent Agriculture is now the focus of “13th Five-Year Plan” in China
 - Automate and intellectualize the process of crop cultivation, plant protection, and insect pest control
 - Edge computing takes the advantage of localized computation and enables spraying the pesticides automatically
- Solution
 - OpenEdge enabled BOX on Drone
 - Baidu IntelliEdge software suite
 - Take video by camera and make ML inference
 - Generate real-time monitor graph



Application: Detect construction dregs and alarm

- Background
 - People are paying more and more attention to the urban environmental sanitation level
 - Discovery of pollutants in advance is more significant
- Solution
 - OpenEdge enabled BOX on truck
 - Baidu IntelliEdge software suite
 - Take video by camera and make ML inference
 - Send structured analyze result to cloud



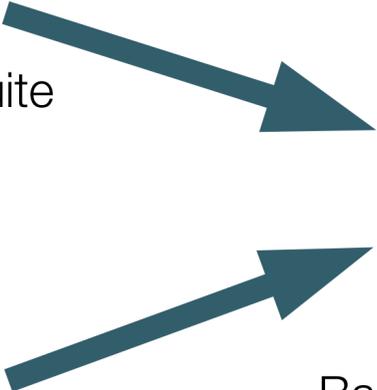
OpenEdge in Education



OpenEdge, with Baidu IntelliEdge suite



Nvidia Jetson Nano



Baidu IntelliEdge Development Board



Baidu Cloud Academy Course



Laboratory

Tested and confirmed hardwares

- Common PC & laptops with Linux and macOS
- Limited support on Windows & Windows Container
- Raspberry Pi Model 3B, Linux-armv7, Raspbian stretch
- NXP LS 1043 ARDB, Linux-aarch64, Ubuntu 16.04
- Xilinx ZC702, Linux-armv7
- CT3-CPU-38, Linux-armv7, LinuxRT
- Intel Apollo Lake Atom, Linux-x86_64, Ubuntu 16.04
- Nvidia Jetson Nano, Linux-aarch64