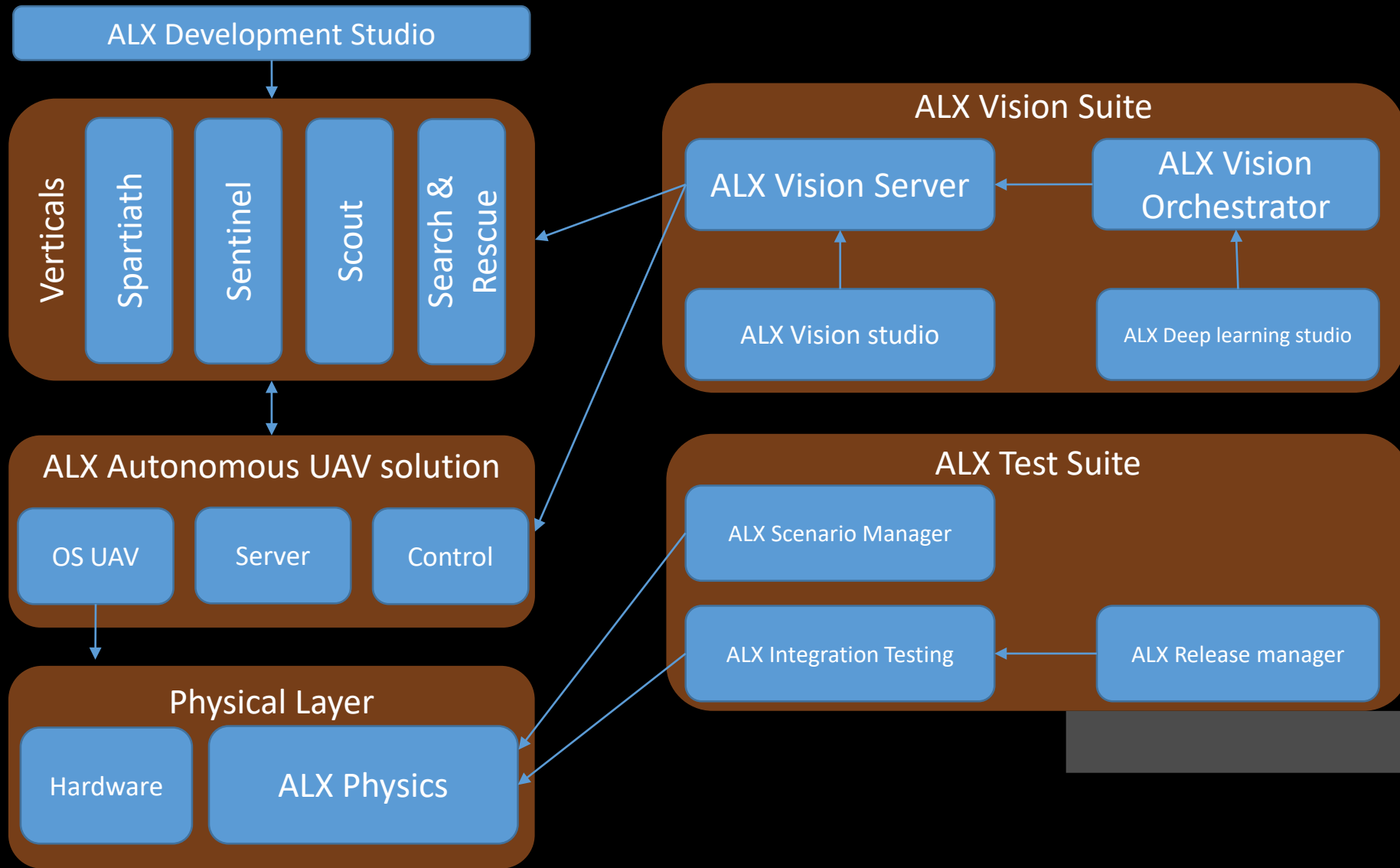


ALX

S Y S T E M S

# Product line

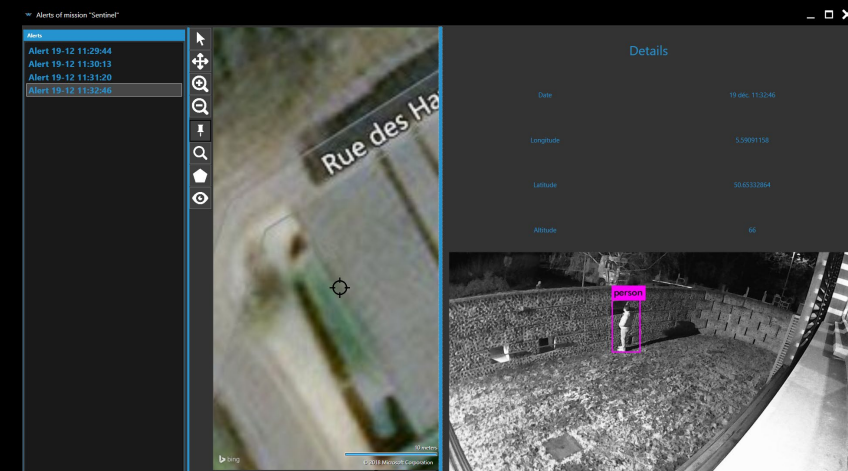
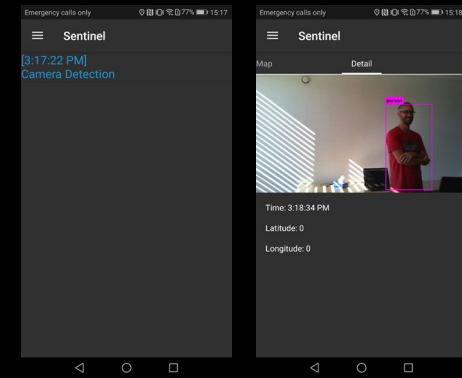


# Definition

Equipment: Hardware that can be equipped with the ALX OS. That currently include drones, cameras, phones, trackers, landing pad

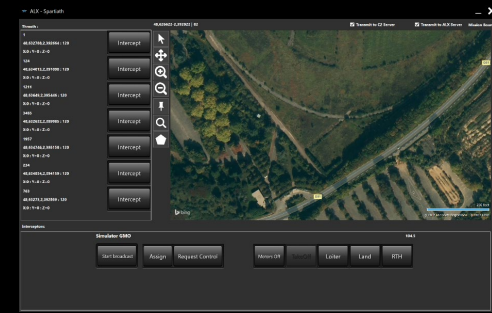
# ALX Sentinel

- Solution dedicated to ensure a perimeter security through AI
- Able to take decision based on a rules engine
- Able to handle numerous camera streams to detect intrusion
- Extendable to any kind of input sensors (smart fences, smart doors,...)
- Able to take actions like :
  - Sending a UAV on the site
  - Activate a speaker
  - Make a phone call, send a message
  - ...



# ALX Spartiath

- Solution dedicated to ensure a perimeter security against UAV
- Able to be interfaced with radar equipments (C2)
- Proceed to autonomous UAV physical interception
- Winner of NATO innovation challenge

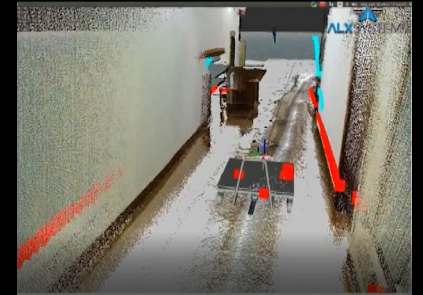
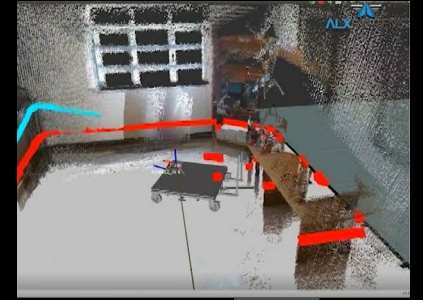


# ALX Search & Rescue

- Solution dedicated to browse an area and search for humans
- Mark on a map
- Detect humans
- Requires no pilots skills

# ALX Scout

- Solution dedicated to scout an unknown area, indoor or outdoor
- Rebuild in 3D an area
- Detect humans
- Requires no pilots



# ALX Studio

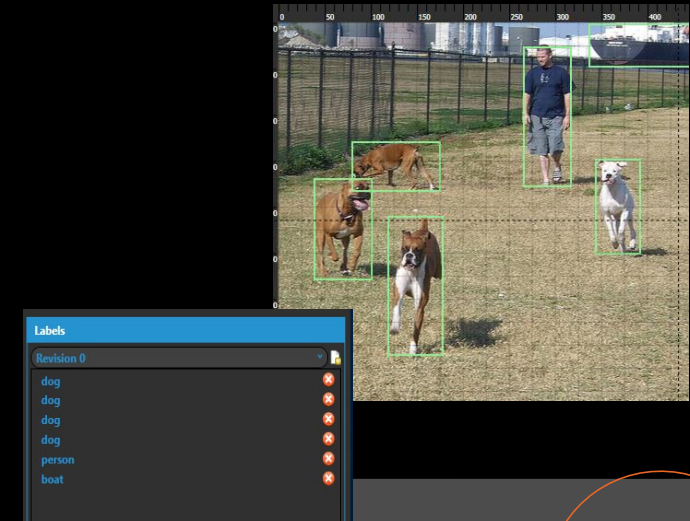
- Solutions dedicated to host the ALX applications like : Integration testing, Release manager, Vision studio, deep learning studio,...
- Centralize the server and services referential
- Globalize the style, logs, human interface





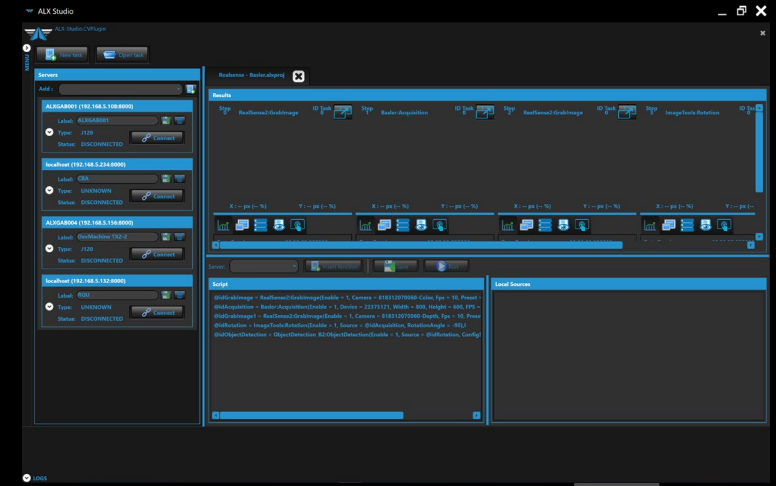
# ALX Deep learning Studio

- Solution dedicated to create datasets of images and prepare them for training
- Connected to the orchestrator, the tool can synchronize the image database and launch multiple neural network training
- Follow the training jobs, even through multiple sessions or orchestrators



# ALX Vision Studio

- Dedicated to :
  - Create through a GUI vision strategy on a vision server
  - Generate vision strategy packages
  - Test vision strategy



# ALX Release manager

- Dedicated to :
  - Handle the products releases and features of our solutions
  - Manage the test coverage on each features
  - Generate reports on the current release and test results

# ALX Integration testing studio

- Dedicated to proceed to integration and non-regression testing
- Take in account the full chain :
  - For UAV Solution : From control SDK to OS and acting on physics to generate “situations” like failover
  - For Vision : From Vision SDK to Vision server, and compare he results with the expectations
- Can run as a server or a standalone application

# ALX Development Studio

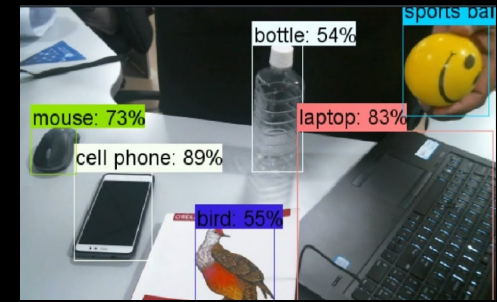
- Dedicated to :
  - Extend data scheme of the ALX Solution
  - Create template for device drivers for ALX OS
  - Create template for applications that will run on the ALX Solution
  - Publish application package on ALX Solution or on the future marketplace

# ALX Scenario Manager

- Dedicated to create any kind of scenario to run on ALX Physics
- Scenarios are various ones, like making a car riding on a road following a path, having a camera on a wall proceeding to scan, crowd moves,...
- Scenarios can be packaged to be launched from another application

# ALX Vision

- Server solution, dedicated to handle Computer vision jobs
- Execute scripts created in the Vision Studio
- Extendable with external computer vision algorithms
- Embeddable on a FPGA, ARM board, standard computer
- Linux based
- Require specific hardware for some processing (mainly CUDA features)



# ALX Vision Orchestrator

- Dedicated to manage computer vision jobs like
  - Image recognition
  - Deep learning training
  - Image processing
- Can run on a private network or in the cloud
- Can manage multiple instance of ALX Vision
- Main usage will be to :
  - Execute deep learning training : the process can take several days, so the orchestrator will manage this in background on a ALX Vision instance
  - Execute image processing : for test purpose or for small installation, instead of having one dedicated ALX Vision per equipment, the orchestrator can be used to ensure scalability at low cost
- REST API, easy to integrate with any technology



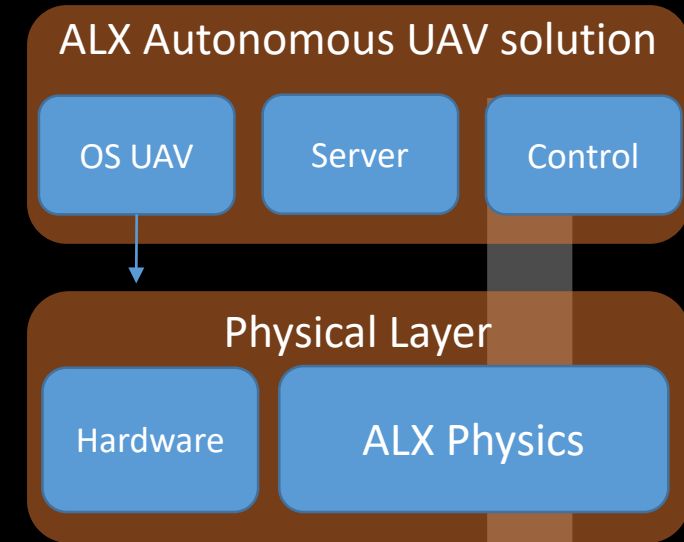
# ALX Physics



- Dedicated to :
  - Proceed to simulation of any kind of scenario
  - Simulate the activity of an equipment as close as possible to the reality
  - Simulate sensors (camera, distance, ...)
  - Validate decision engine of the ALX OS
- Can load real world map
  - Generated through DEM service and satellite imagery (at this time, adding buildings is a manual operation)
- Can run scenario created through ALX Scenario Manager
- Can simulate failure (GPS, sensors,...)
- Can run numerous equipment simultaneously

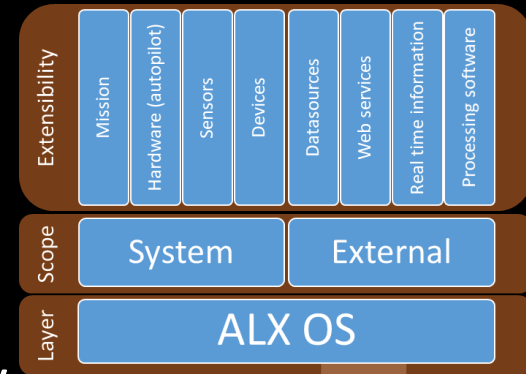
# ALX Autonomous UAV Solution

- Complete toolset to build autonomous UAV solutions
- Contains :
  - a server, cloud or privately hosted
  - Many “host”
  - Many control stations
- Solution is interfaceable with other software
- Dedicated to integrate various kind of “equipment” and execute missions
- The complete solutions is controllable through SDK
- The solution can receive applications like ‘Sentinel’, ‘Spartath’, ‘Scout’,...
- Custom applications can be developed with the ALX Development Studio



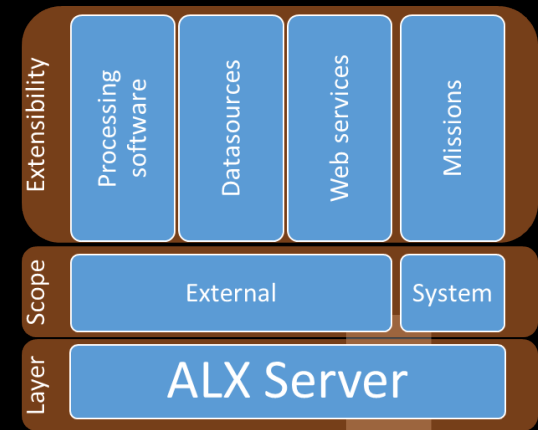
# ALX OS (“Host”)

- Software that runs on a board to control an “equipment”
- Can run remotely or embedded on the “equipment”, preferably embedded for drones
- Considered as an operating system since it can be extended by new applications, new device drivers, new cameras, and is hardware agnostic
- Depending what functions are required, embedded processing board can vary from 20\$ to >2500\$



# ALX Server (“Server”)

- Software that runs in a private or cloud environment
- Server is storing all the data, logs, medias,...
- Server is handling the access control to the solution
- Support multiple OS and Control simultaneously



# ALX Control (“Groundstation”)

- Software that runs on a computer, a tablet or a phone
- Used to control 1 to many UAV
- Launch and manage missions



# ALX Development Machine

- UAV dedicated to easily change his content and sensors for development purposes
- Low cost
- Multi boards, multi communications systems, multi sensors

# ALX Drone in the box

- UAV dedicated to easily be ready on demand, always on, in his box to ensure the permanent charge, especially designed for Sentinel
- 2 versions
  - Small one : 60 cm, +-15 min flight time
  - Big one : 150cm, +-1h flight time
- Multi boards, multi communications systems, multi sensors

# ALX Receiver

- Board dedicated to interface Radio controller with software



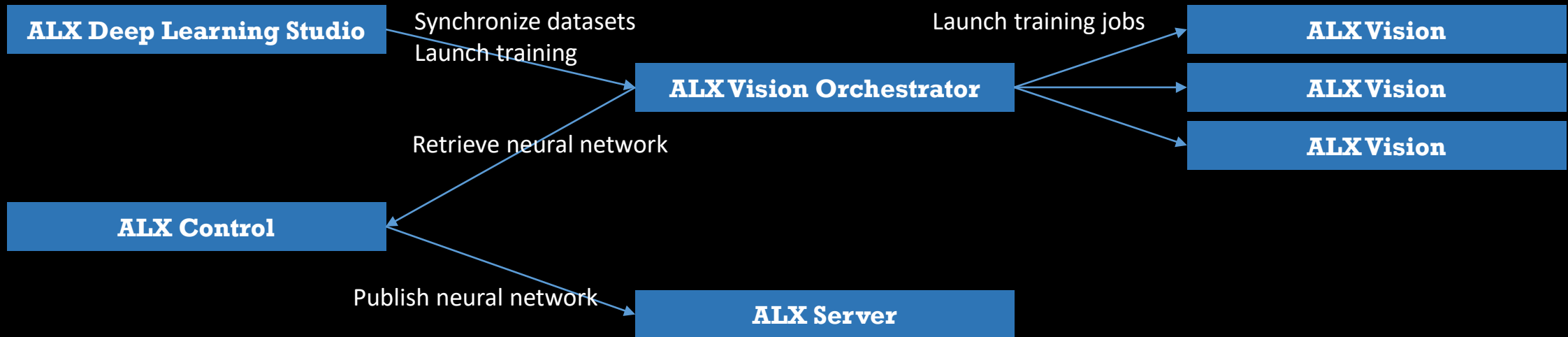
# ALX Interceptor

- UAV dedicated to intercept target drones, in Spartiath application

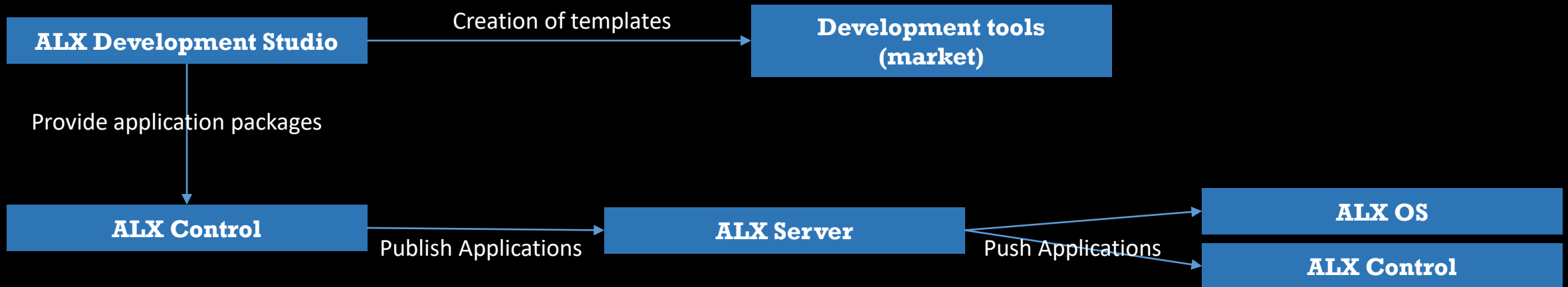
# ALX Scout

- UAV dedicated to fly indoor and support Scout application

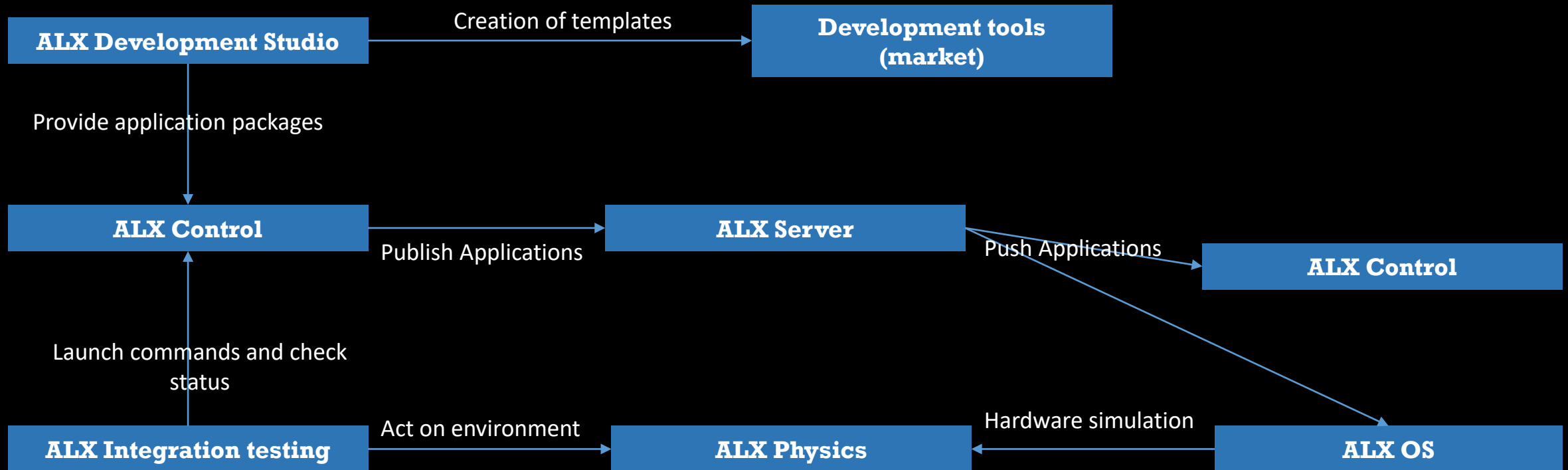
# Process to teach ALX Solution new objects



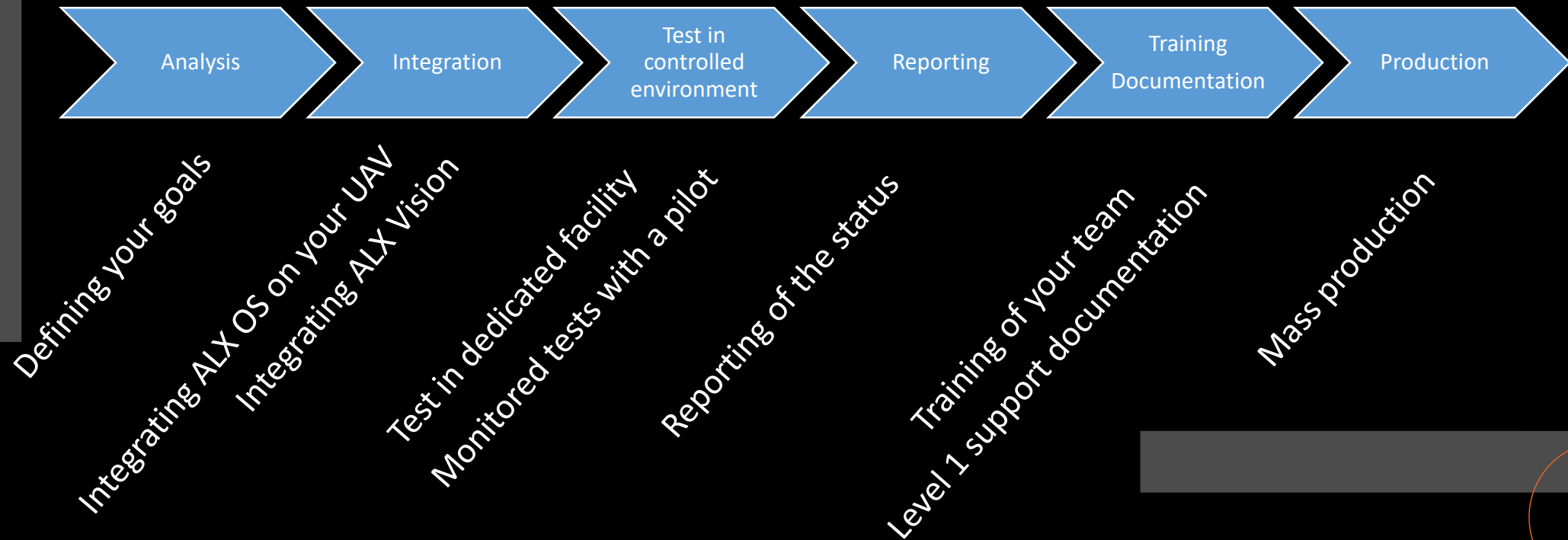
# Process to develop ALX Solution applications



# Process to validate UAV missions



# Value proposition



# Quality Control

- 3D Simulation solution
- Integration testing server
- Generation of sensor jamming, image blurring, failsafe scenarios
- Generation of real world scenario

