

AEROBI

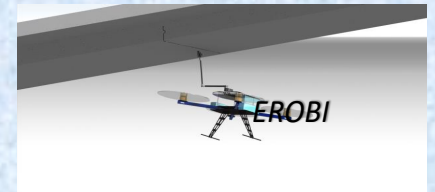
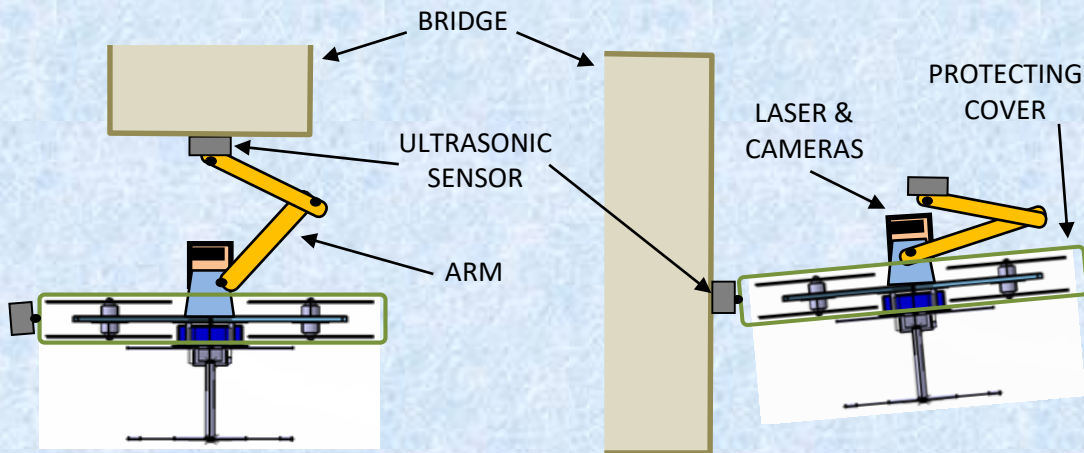
European Robotics Forum



P.Chrobocinski, ADS
Edinburgh, March 24th 2017

AMBITION

- Integrate a full set of sensors on an RPAS for outdoor inspection of bridges: cameras, laser scanner, ultra-sonic
- Integrate an articulated arm on the RPAS to position the sensors for inspection
- Develop a completely integrated system for bridge inspection and assessment (RPAS, data link, GCS)



SYSTEM ARCHITECTURE

User HQ or
Maintenance centre

 Reporting

AEROBI

Ground segment = Mobile inspection lab

Mission
Monitoring

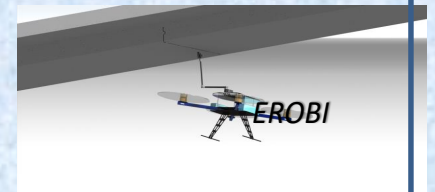
Mission
Prep. & Exec.

Sensors
exploitation

 Data link



Air platform and sensors



HOW

- Starting from various project outcomes (ARCAS, ROBO-SPECT,...) for the RPAS and sensors
- Through an iterative process:



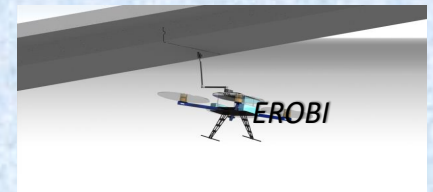
V1 Bridge in Spain
End 2016



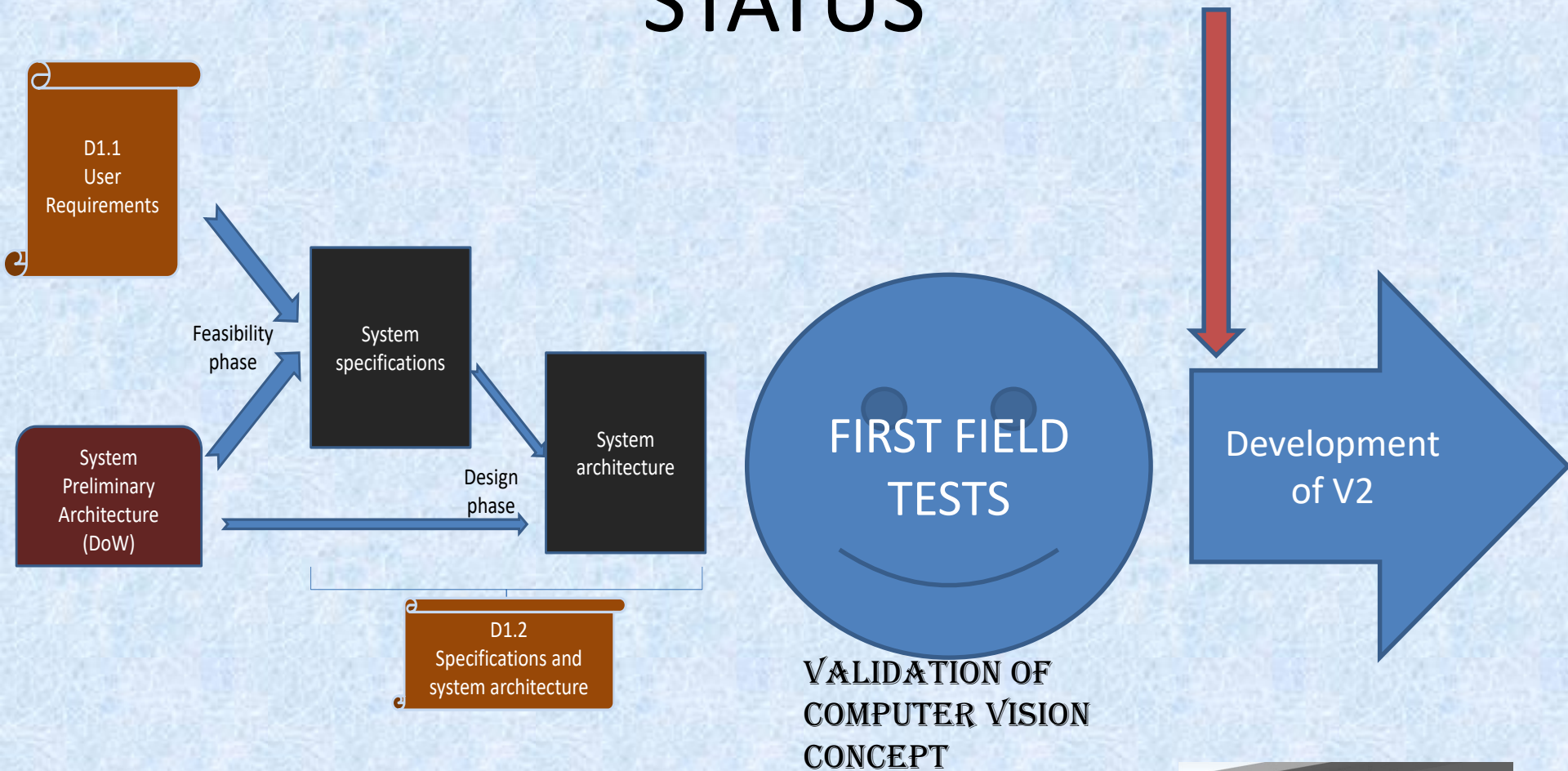
V2: Axios bridge, Egnatia Odos, February 2018



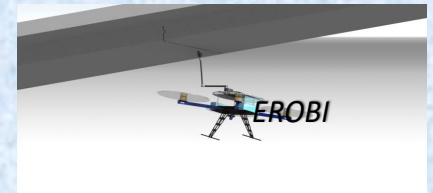
V3: Strymonas river bridge, Egnatia Odos, September 2018



STATUS



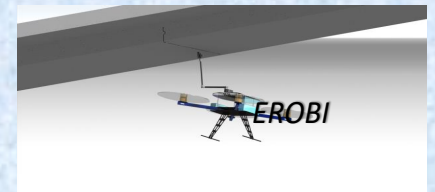
FIRST YEAR



IMPACT ON THE APPLICATION DOMAIN

First aerial robot for bridge inspection:

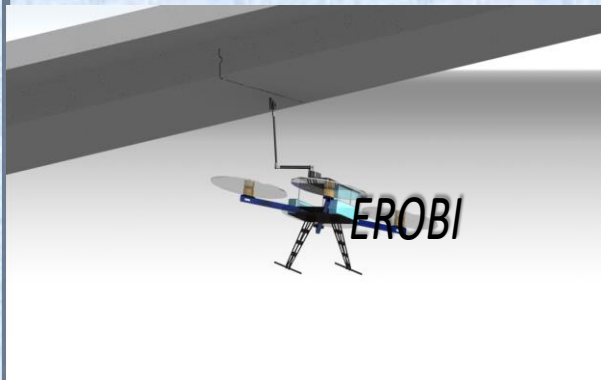
- Accessibility without heavy scaffolding/ropes/elevators -> safety for operators and time saving
- Reduced road closing time
- Better transportability for the inspection phase (1 case + the small RPAS versus several trucks and cars for the manual inspection)
- Much faster inspection with 3D mapping capabilities
- Huge money saving for the bridge operator compared to manual inspections
- Quick structural assessment



OTHER APPLICATION DOMAINS

- Railways infrastructures (including cables)
- Dams
- Oil & Gas (Processing units, storage units, pipelines)
- Buildings





Thank you



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