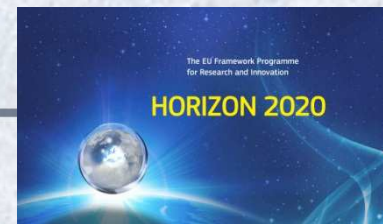




# AEROBI

## European Robotics Forum

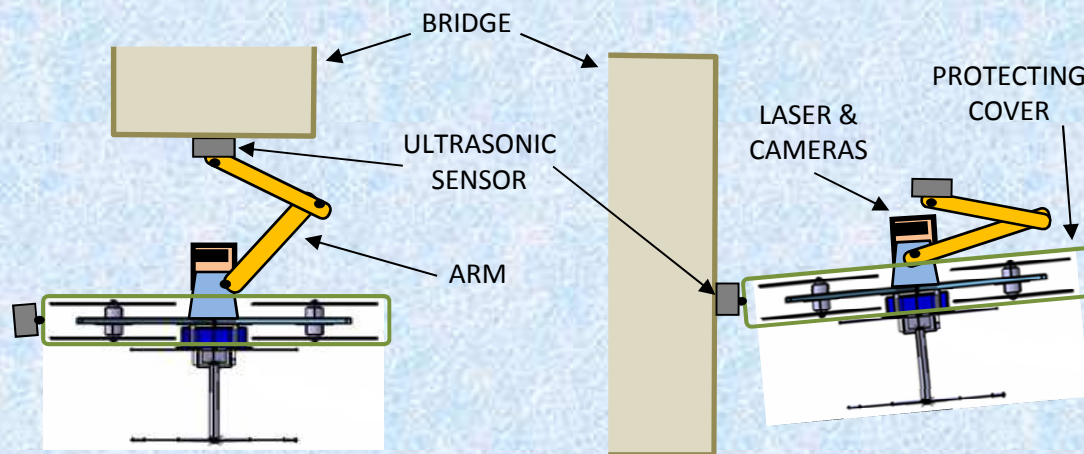
P.Chrobocinski, ADS  
Ljubljana, March 21st 2016



Programme funded by the  
**EUROPEAN UNION**

# 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



Air platform and sensors

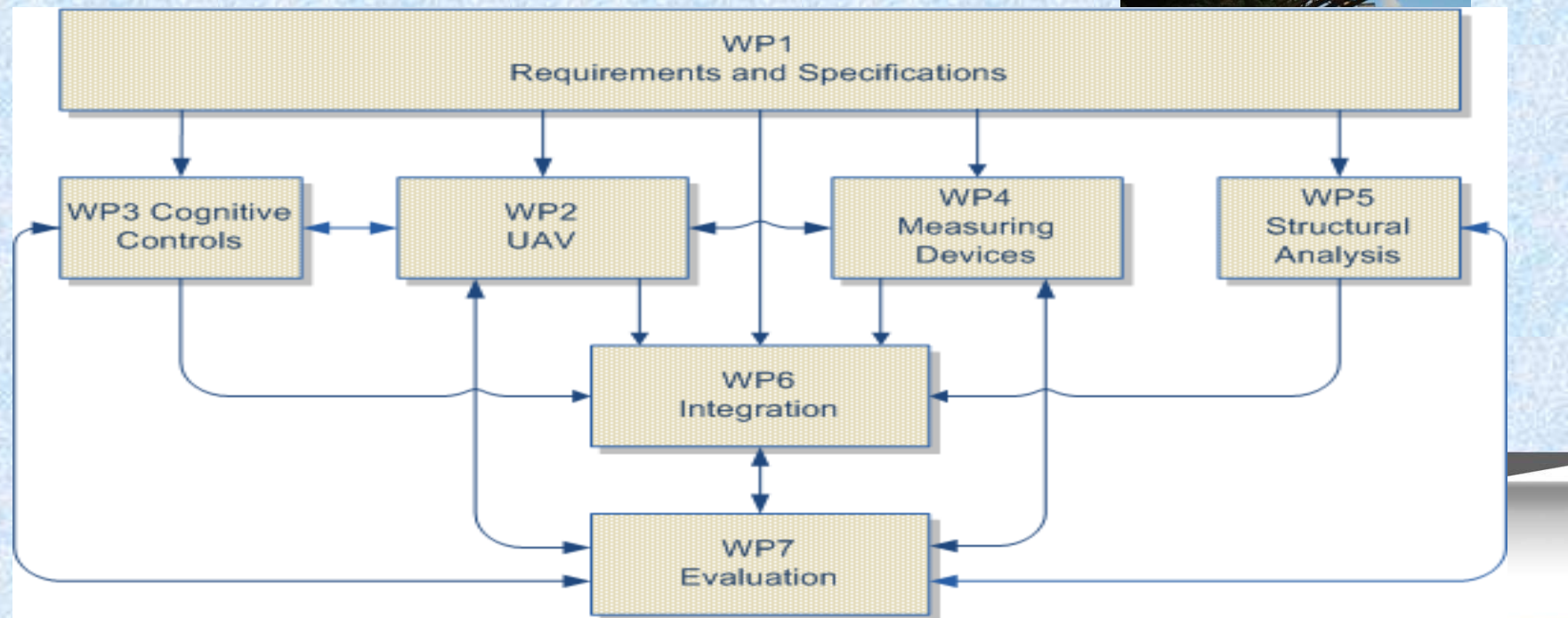
Data link





# HOW

- Starting from various project outcomes (ARCAS in particular) for the RPAS and sensors
- Through an iterative process



# WHEN

**V1 University of Seville  
End 2016**



**V2: Bridge T2, Egnatia  
Odos, February 2018**



**V3: Strymonas river  
bridge, Egnatia Odos,  
September 2018**



# IMPACT ON THE APPLICATION DOMAIN

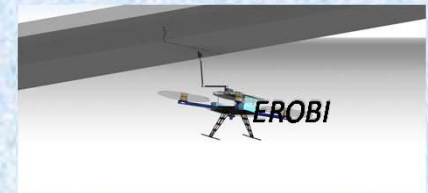
First aerial robot for bridge inspection:

- 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



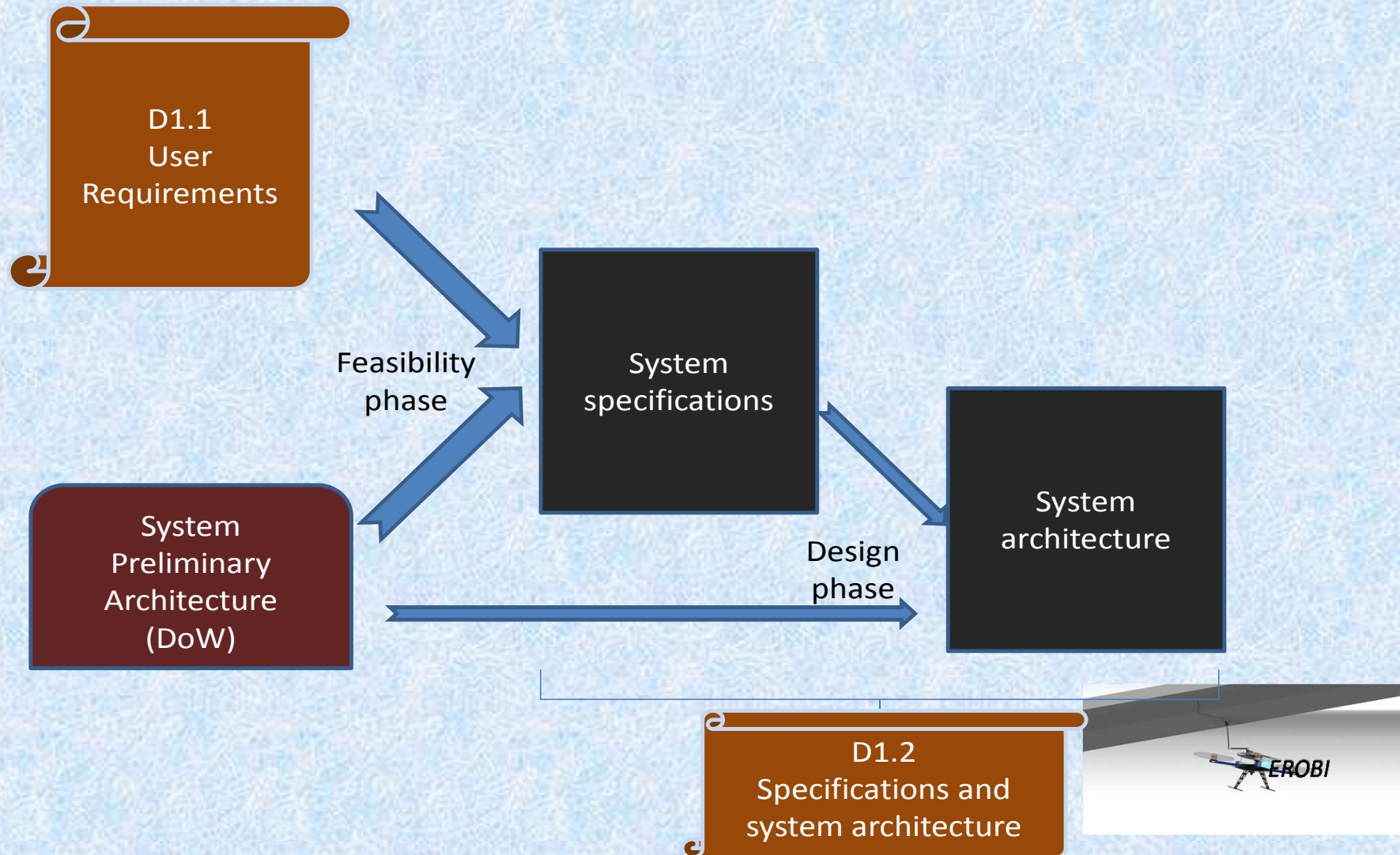
# OTHER APPLICATION DOMAINS

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





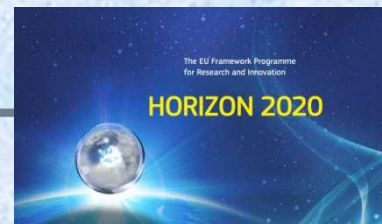
# STATUS







*Thank you*



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