



High-Altitude Imaging System

Project IRIS

Electrical and Computer Engineering
Fourth Year Design Project

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What is it?

- High altitude hydrogen balloon
- Sophisticated sensing payload
- Dynamic 3-axis stabilization
- Ultra long-range communication system



Challenges to be met

- Up to 110,000 feet or 32 km in altitude
- Half-metre image resolution of ground objects
- Real-time communication and tracking
- Low of $-60\text{ }^{\circ}\text{C}$



What we need?

- **Main computer**
Colibri PXA320 motherboard
- **Communications**
Xtend long-range UHF radio modem pair
GM862 Cellular Quad Band module
- **Camera**
Canon PowerShot SD890



What we need?

- **Sensors**

 - GPS (high-altitude)

 - Digital compass

 - Temperature

- **Stabilization**

 - Servo motors

 - Armature and tilt mechanism

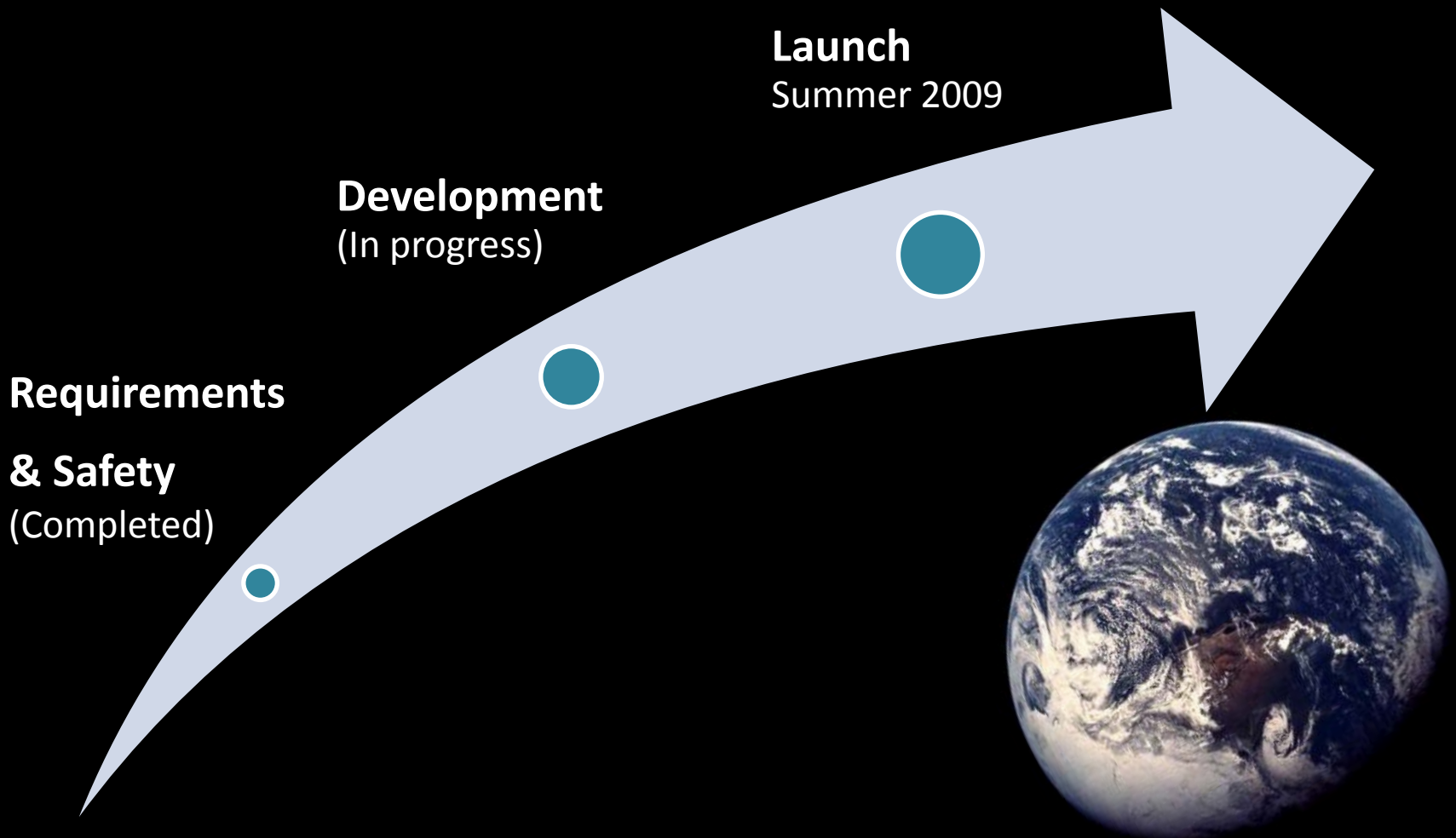


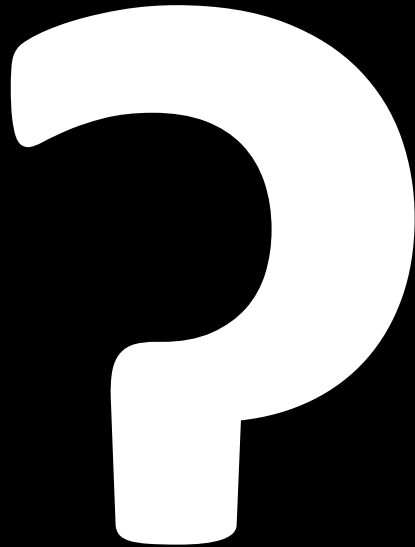
Future Value

- Performance parts not available in ECE FYDP inventory
- Components reusable for other applications in future FYDPs



Timeframe





QUESTIONS



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