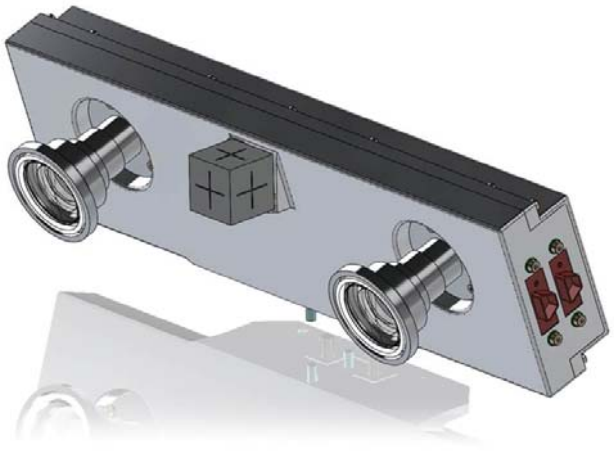

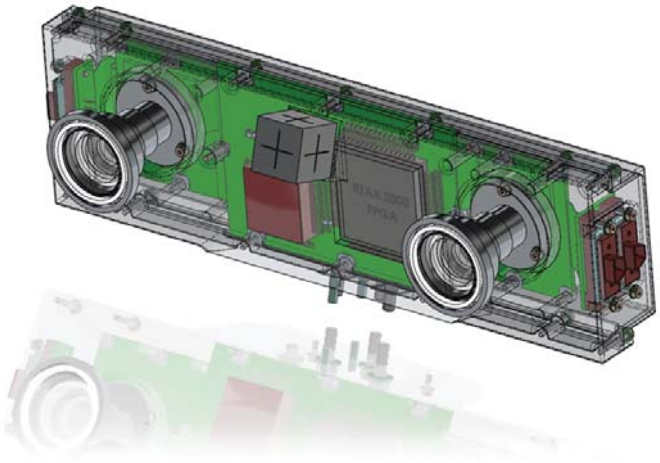

ExoMars Navigation Camera

ExoMars is a European Space Agency (ESA) Programme in international cooperation with multiple space agencies that will explore the surface and sub-surface of Mars.

Astrium Limited is a core team member for the ExoMars mission, and as such has contracted Neptec Design Group (Neptec) to develop and deliver the ExoMars Rover Vehicle Navigation and Localization Cameras.

Each of the navigation and localization cameras is composed of a) a mechanical bench, b) two cameras (one pair), c) a calibration cube, d) associated electronics and e) interconnecting harnesses. Due to the similarities in requirements of both the navigation and localization cameras, one design has been adopted by Neptec that will suit both the navigation and localization objectives.

The key requirements influencing the design of the cameras are listed in the table.

In addition to these performance requirements, the cameras must survive the challenging Martian environment, while maintaining performance and alignment over a wide temperature range from -120 ˚C to 40 ˚C. The program has just completed the Preliminary Design Review phase and is now transitioning to the detailed design phase. The Critical Design Review milestone is planned for the end of 2014, followed by flight unit delivery at the end of 2015.

Key Requirements

- **Mass:** 800g
- **Volume Envelope:** 1 L
- **Sampling Rate:** 5 Hz
- **Field of View:** 65˚
- **Resolution:** 1024 x 1024
- **Power:** Unregulated 28V DC (21 – 30V DC)
  Max: 5W operating, 1.5W stand-by
- **Communications Interface:** SpaceWire RMAP, 100Mbps
- **Lifetime:** ~9 months transit and ~220 days on Mars

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