



## Net reaches out to final frontier

A programme to kick-start the use of internet communications in space has been announced by the US government.

The Department of Defense's Iris project will put an internet router in space by the start of 2009.

It will allow voice, video and data communications for US troops using standards developed for the internet.

Eventually Iris could extend the net into space, allowing data to flow directly between satellites, rather than sending it via ground stations.

"Iris is to the future of satellite-based communications what Arpanet was to the creation of the internet in the 1960s," said Don Brown, of Intelsat General, one of the companies who will build the platform.

Arpanet (Advanced Research Projects Agency Network), the predecessor of the internet, was developed by the United States Department of Defense.

### Remote access

The Iris (Internet Router Protocol in Space) project has been given the go ahead after winning funding from the US Department of Defense, under its Joint Capability Technology Demonstration (JCTD) programme.

The programme aims to develop advanced concepts and put "innovative concepts into the hands of war fighters in the field."

The Iris project is one of seven that has been given funding this year. Others include development of smart sensors and counter camouflage technology.

**This is a logical extension of radio communication between satellites**  
Paul Stephens

Iris is a three year programme to develop a satellite platform and "space hardened router".

A router is a piece of hardware that directs packets of information around a network.

The specially designed equipment will be developed by network specialist Cisco while the geostationary satellite, IS-14, will be built by Intelsat.

When launched in 2009 it will allow troops to communicate over the internet from the remotest regions from Europe Africa and the Americas.

"Iris extends the internet into space, integrating satellite systems and the ground infrastructure for warfighters, first responders and others who need seamless and instant communications," said Bill Shernit, CEO of Intelsat general.

After initial testing the satellite will be opened up for commercial use.

### Cyber space

Launching Iris could also signal the beginning of the development of the internet in space.

At the moment most satellites have to communicate with one another through ground stations or via radio signals to a relay satellite.

Deploying routers on satellites would allow them to communicate directly with one another using common internet standards, known as internet protocol (IP).

"The Iris architecture allows direct IP routing over satellite, eliminating the need for routing via a ground-based teleport," said Mr Brown.

It also raises the possibility of routinely transferring data through the satellite network, rather than ground based cables.

"This is a logical extension of radio communication between satellites," said Paul Stephens of DMC international imaging, a subsidiary of Surrey Satellites in the UK.

Along with Cisco and US space agency Nasa, it put one of the first routers in space onboard the UK-DMC satellite, part of the Disaster Monitoring Constellation (DMC) used for observing the Earth for major disasters.

The DMC router uses the latest IP networking standards to send critical images to ground stations for use by rescue workers.

With IP becoming more prevalent for use in space, Nasa and internet pioneer Vint Cerf have also investigated the possibility of using internet technology across the solar system.

Although some work has been carried out on the necessary standards and protocols, no definite schedule has been announced for this interplanetary internet.

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