

Grid activities in Australia

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Outline:

- **GrangeNet**
APAC (J O'Callaghan)
- **Photonics networks & devices**
CRC (M Sceats)
- **Access Grid node**
VisLab-ATP (bap)
- **Middleware**
Monash U. (D Abramson)

GrangeNet:

A GRid And Next GEneration Network

*Supported by the Federal Government's
BITS Advanced Networks Program [3 networks]*

AARNet, APAC, DSTC, Cisco, PowerTel

Service user communities by designing, building, deploying, operating and enhancing

- *state-of-the art networks;*
- *middleware; and*
- *advanced applications*

Develop sustainable services models for advanced information infrastructure based on

- *Project and financial planning*
- *Network management and monitoring*
- *Quality of service and end-to-end performance*
- *Costs of interconnecting networks*
- *Demand forecasting and analysis*

Deliver benefits to Australian industry from advanced information technology programs and infrastructure

Core Participants:

- **AARNet, APAC, DSTC, Cisco, PowerTel**

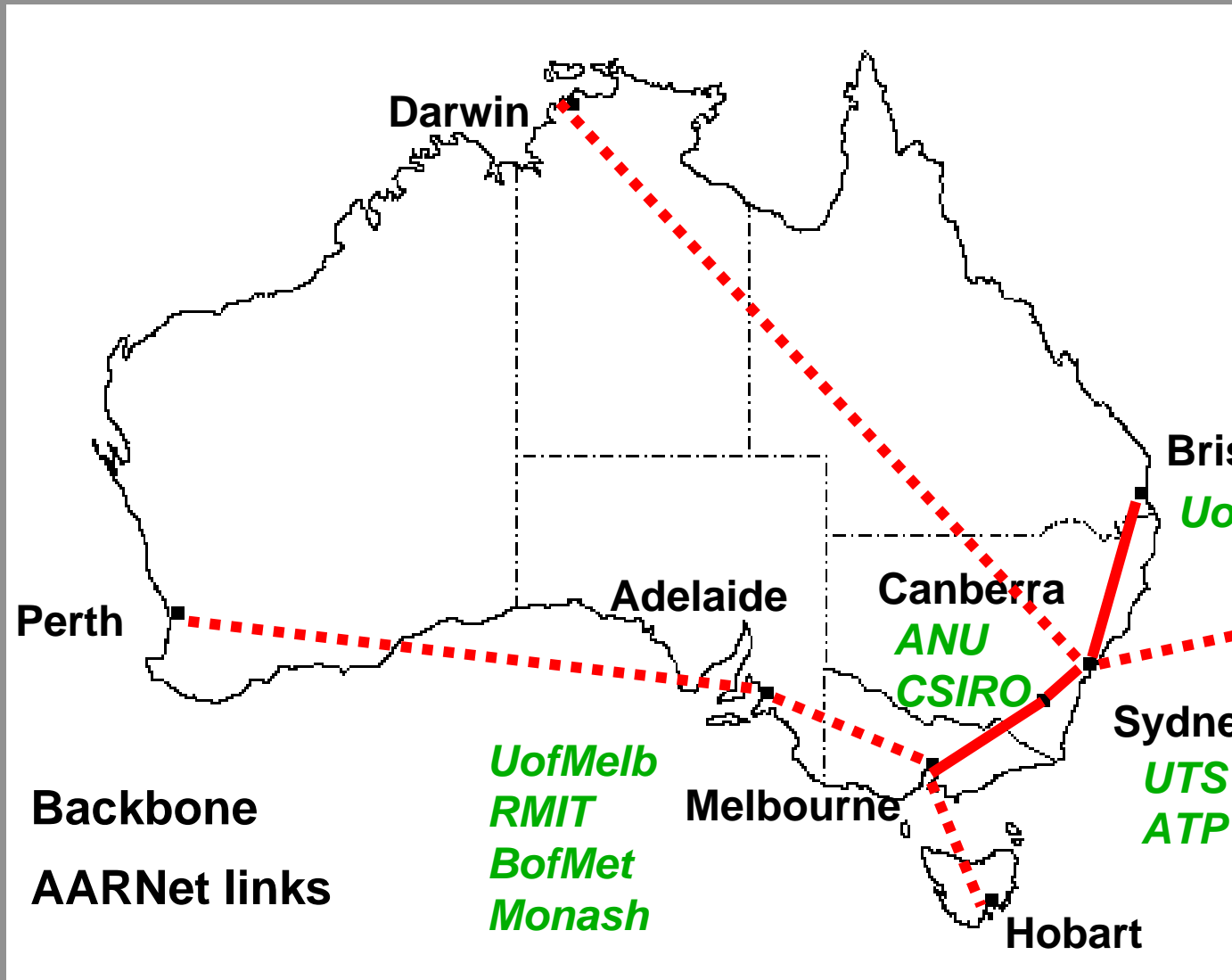
Participants:

- APAC Partners

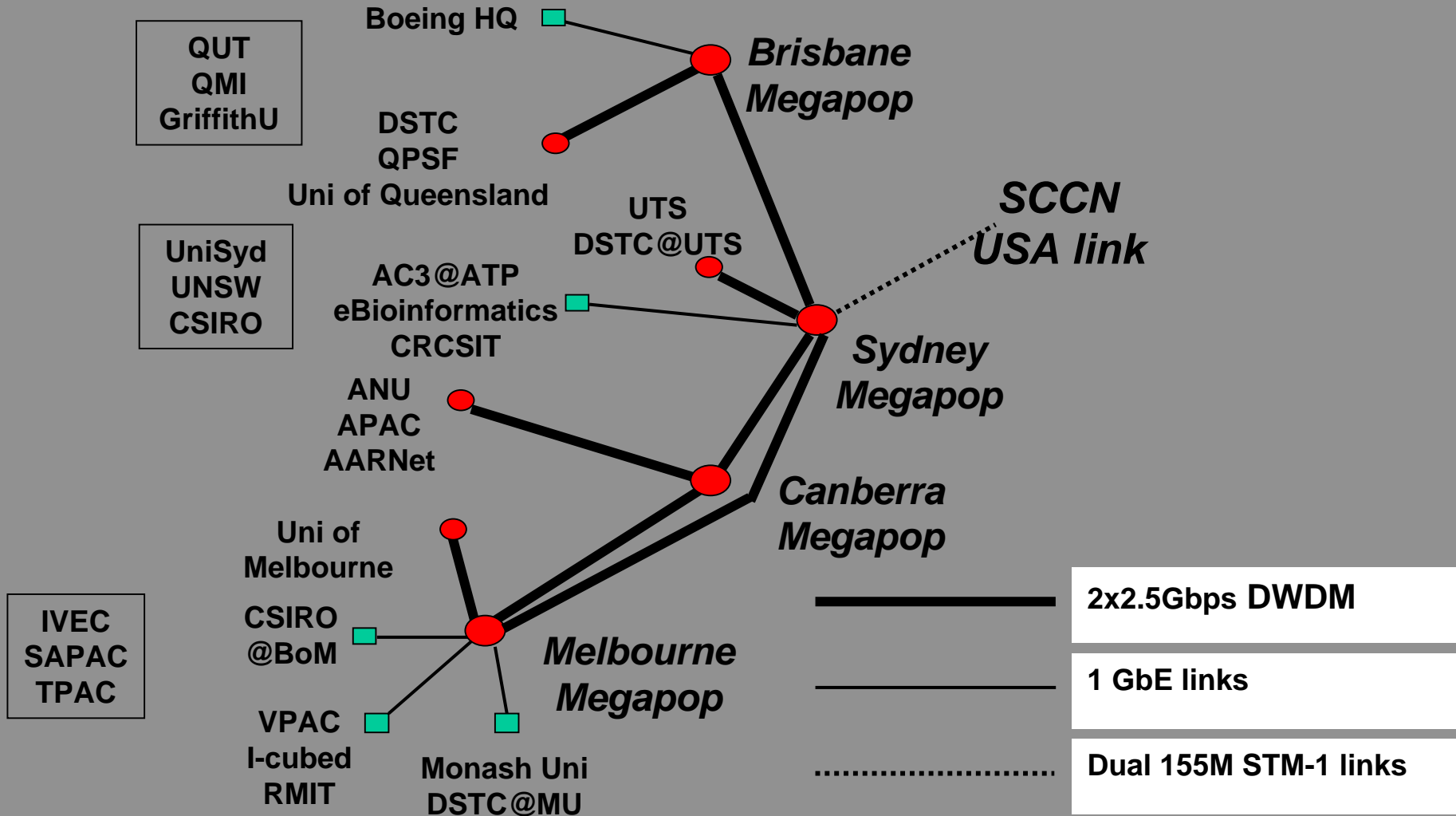
Affiliates:

- AARNet members
- CRCST, eBioinformatics, I-cubed, QMI, Compaq
- National R&E Network Organisations
- National Advanced Computing Centres

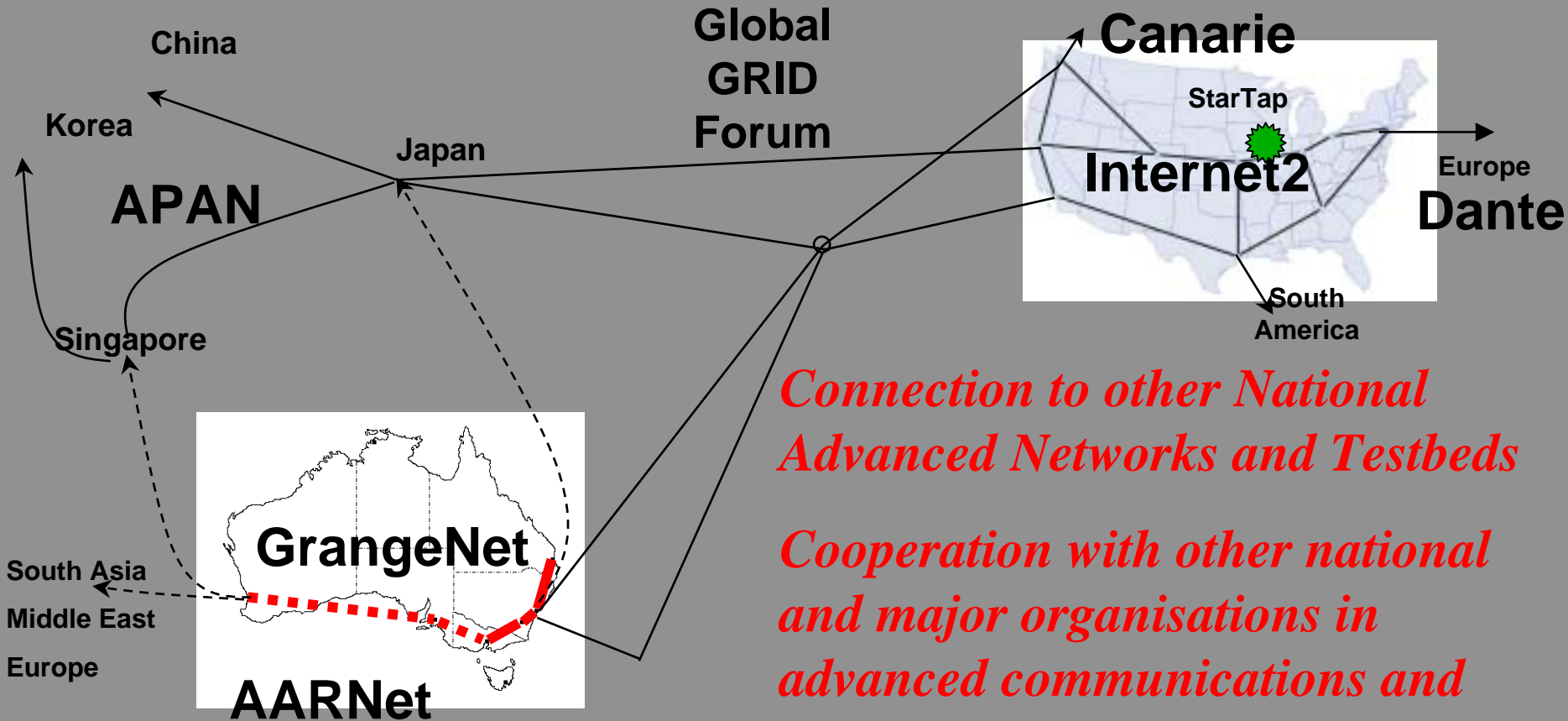
GrangeNet Backbone



Initial GrangeNet Locations



GrangeNet Role in Advanced Networks



Connection to other National Advanced Networks and Testbeds

Cooperation with other national and major organisations in advanced communications and grid services

AARNet members

- News and media, education, Voice-over-IP

APAC partners and users

- **Computational Chemistry and Biology**
- **Computational Physics**
- **Astronomy**
- **Bio-informatics**
- **Environmental Modelling**

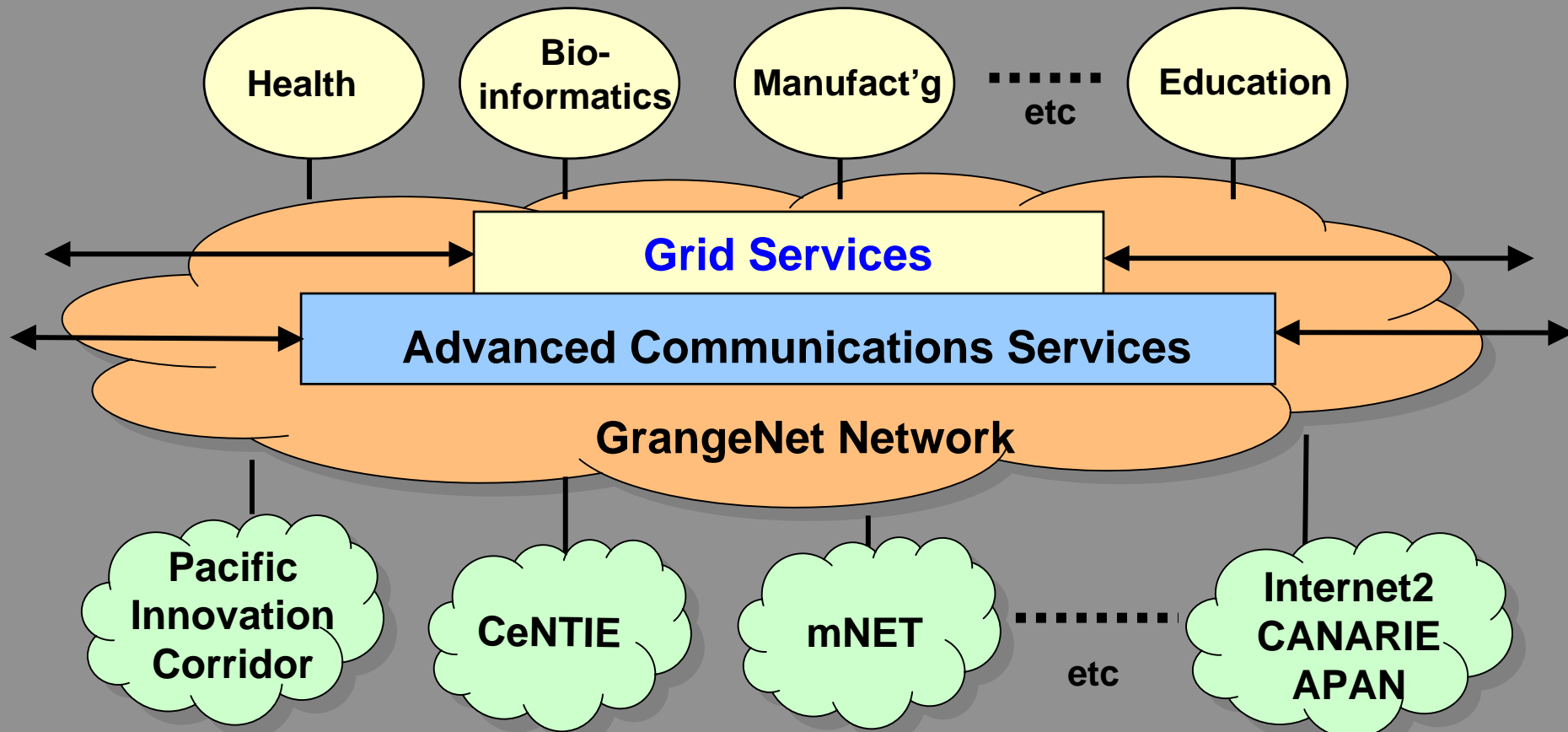
Other communities

- On-line Health
- Education and Training
- Film and Media
- Manufacturing

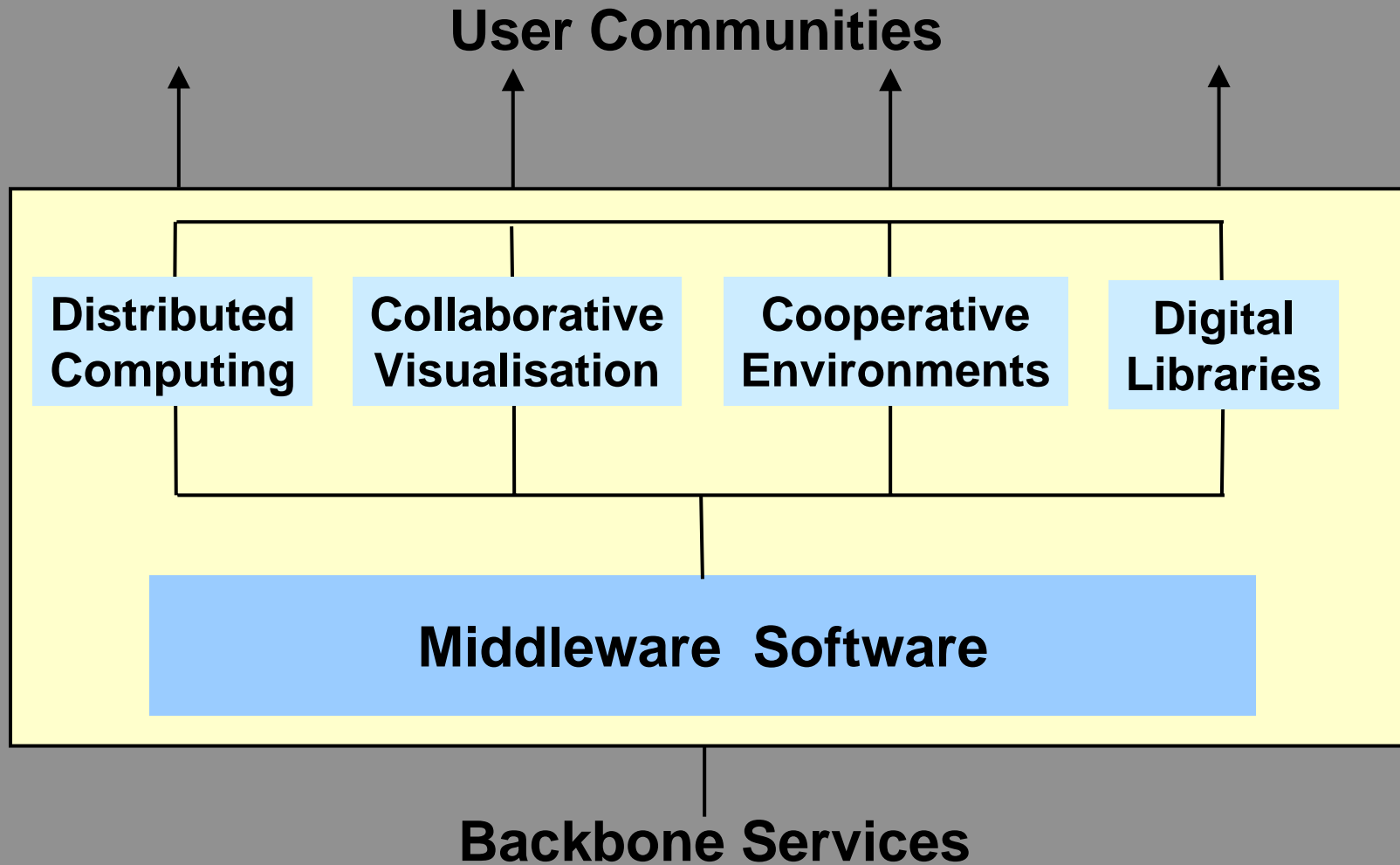
GrangeNet: An Open Infrastructure



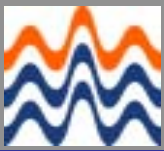
User Communities



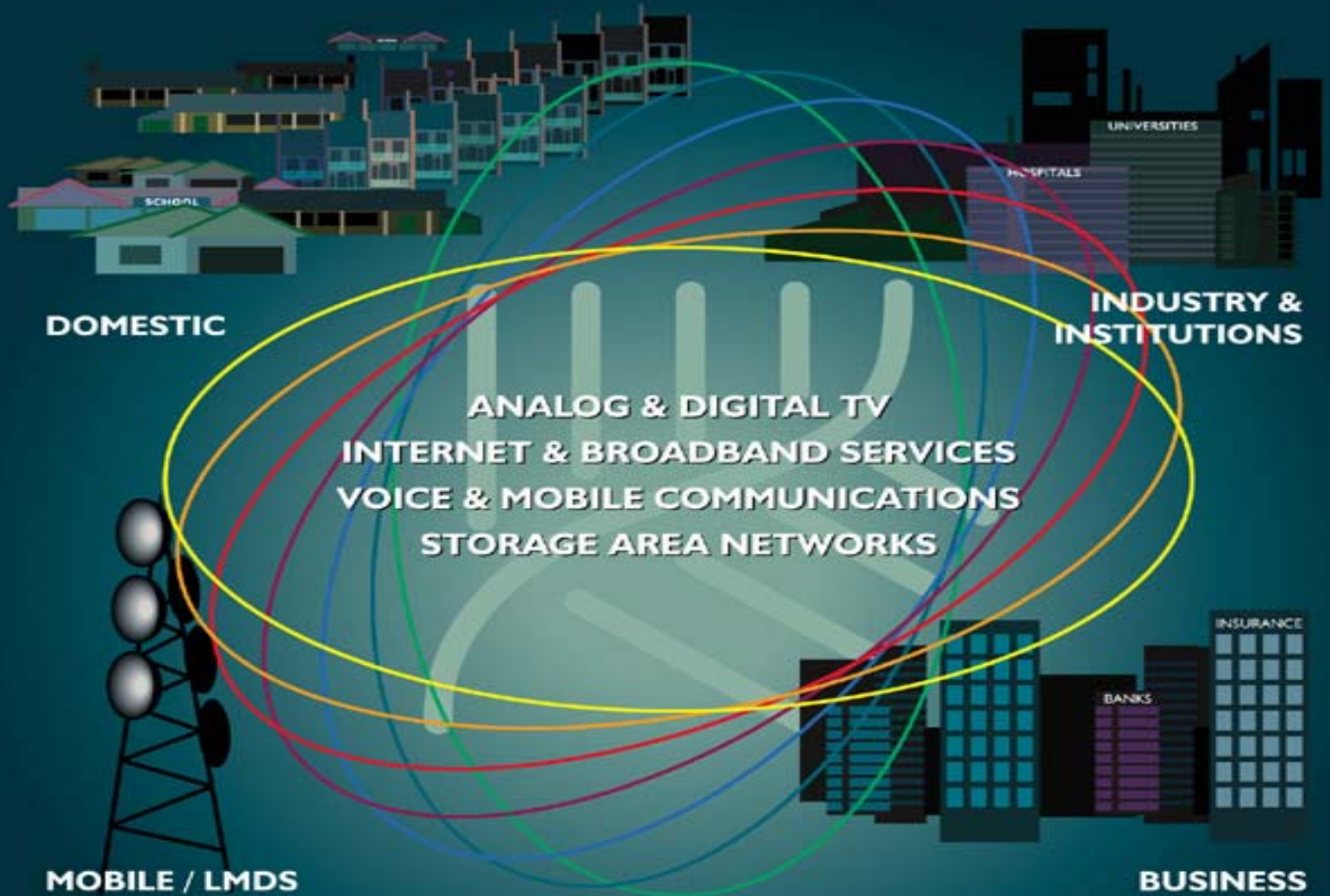
Specialised, Regional and International Networks

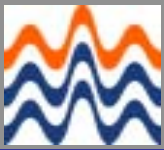


2. Photonics networks & devices



PHOTONIC NETWORKS





- UNIV OF SYDNEY
- ANU
- TELSTRA
- SIEMENS

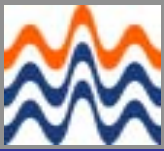
- ABB
- ERICSSON
- PHOTONIC TECHNOLOGIES

- RMIT
- TAFE NSW
- VISION ABEL
- COHERENT FIBRECOMMS.
- NEXTROM TECHNOLOGIES
- AUSTRALIAN PHOTONICS
- MACQUARIE BANK
- AUSTRALIAN TECHNOLOGY PARK

- UNIV OF MELBOURNE
- UNSW
- TRANSGRID
- AUSTRALIAN AMP

- ADC/AOFR
- UNIPHASE FIBER COMPONENTS
- VIRTUAL PHOTONICS

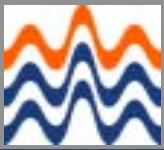
- DSTO
- BRITISH AEROSPACE
- FILTRONIC COMPONENTS
- CEOS
- REDFERN FIBRES
- FFT
- A&B INVESTMENTS
- REDCENTRE



Materials (Glass, Polymer, LiNbO₃, Semiconductors)
Optical Fibre (Doped, Novel Geometry)
Planar Waveguides (PECVD, HARE, Ormosil)
Material Processing (UV, IR, Thermal, Poling)
Devices (Gratings, Couplers, λ -Conv, Switches, Atten.)
Systems (Lasers, Amplifiers , OXC)
Sensors (Current, Voltage, Temperature, Strain)
Signal Processing (Phased array radar, Defense)
Networks (WDM, Access, WDM MAN Demonstrator)
Photonic Manufacturing (Packaging, Automation)
Future Technologies (Spatial solitons)

Vertical Integration - “*Food Chain*”

- Networks** - Photonic Packet Switching
- Systems** - Optical Network Nodes
- Sub-Systems** - Amplifiers / Lasers
- Devices** - Bragg gratings / λ Converter
- Materials** - Fibre / Planar



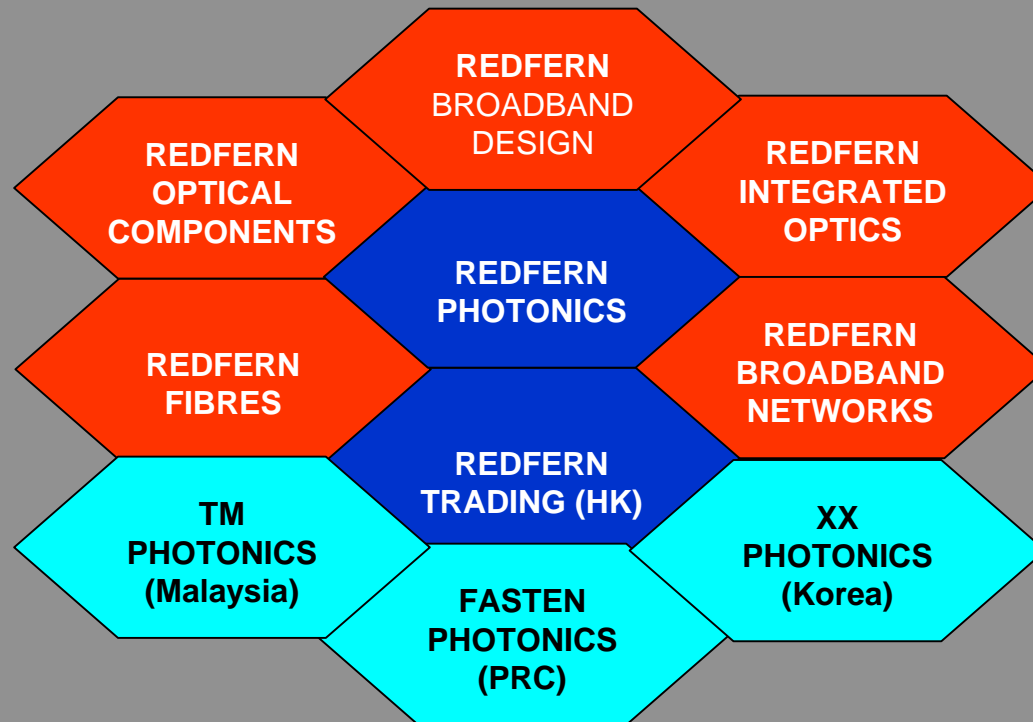
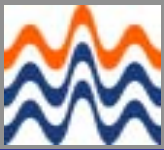
Redfern Photonics Pty Ltd

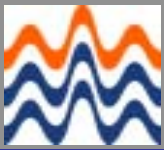
- “Redfern” brand name

Four “Redfern” spin-offs launched in Feb ‘99

- Redfern Fibres Pty Ltd
- Redfern Optical Components
- Redfern Integrated Optics
- Redfern Broadband Networks

Equity investment (JV) or venture capital





CRCs are generating a **culture of collaboration**

- **between research institutions, and with industry**
 - **in Australia**
 - **internationally**

CRC Education programs lead to skills transfers to and from Australia and build relationships

R&D and education linkages lead to commercial opportunities for

- **joint ventures located in Australia**
- **joint ventures manufacturing offshore**
- **technology transfer**

3. Access Grid node

Access Grid Nodes

**SC Global:
Denver, Co. Nov. 12-16 & worldwide**

Collaborative computing & video-conferencing over IP

Develop remote educational activities

Bring unique remote content to technical talks or the showfloor

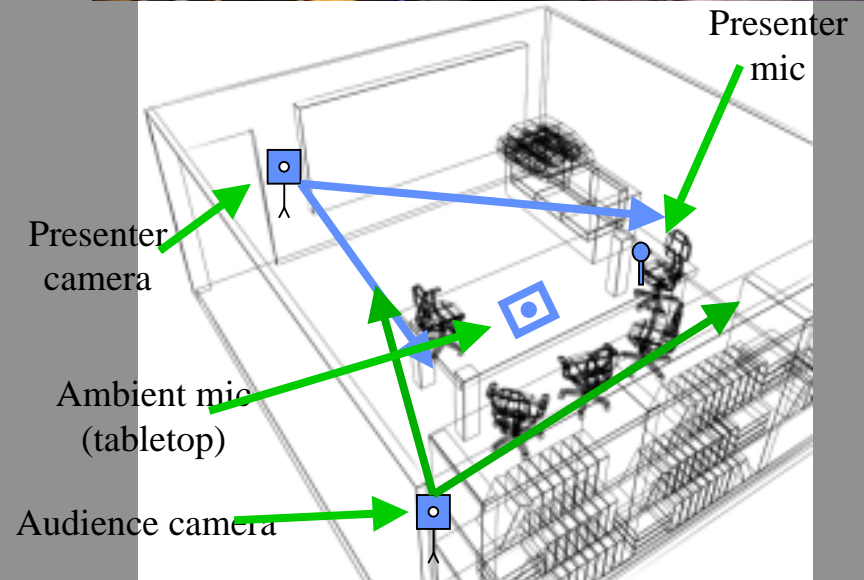
International & U.S. Constellation Sites

Apply SC Global infrastructure to industrial programs

Sponsor SC Global development

.. build and operate SC Global infrastructure!

- **Sydney VisLab**
 - **AG Node at ATP**



source: Ian Foster

ARGONNE

The screenshot shows a Linux desktop environment during a multi-camera Access Grid session. The desktop is cluttered with several windows:

- Terminal Window:** Displays network logs and system messages, including "p2 being added", "root@p2: ~", and "vic: this is".
- File Manager:** Shows a directory listing with files like "urlen", "speaker", and "microphone".
- System Tray:** Contains icons for network status, volume, and system clock (11:25 AM Wed Aug 29).
- Access Grid Windows:** Multiple windows showing video feeds from various locations, each with a title bar and status information (e.g., "ANL/ATP Workshop AUDIENCE", "ARSC/AGN MAM", "Sheridan College AUDIENCE").
- Web Browser:** A window showing a webpage with text, including "it's currently running about 30% cpu util" and "terry]: Yes, but it's difficult for me to understand English".
- System Monitor:** A window showing system performance metrics like CPU usage and memory.



SC-Global: test “cruises” + AG-Sydney



ENDS

.. see you on the Grid