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Janet Update 2014

Tim Kidd,
Operations Director

Jeremy Sharp,
Head of Strategic Technologies

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Agenda

- Infrastructure
- Service Update
- 30 years of Janet
- Video Collaboration
- Access and Identity Management
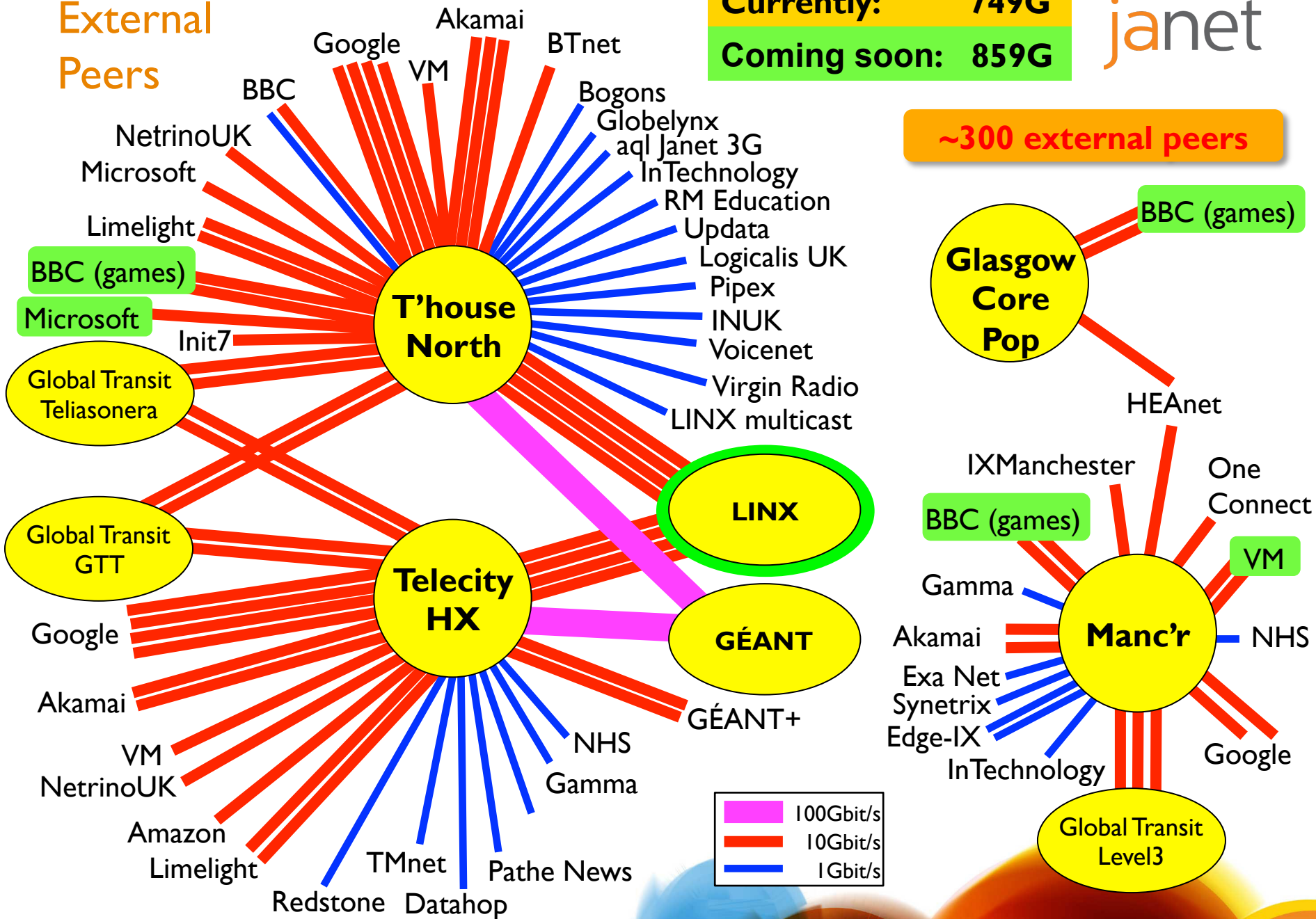- E-infrastructure Support

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Agenda

- **Infrastructure**
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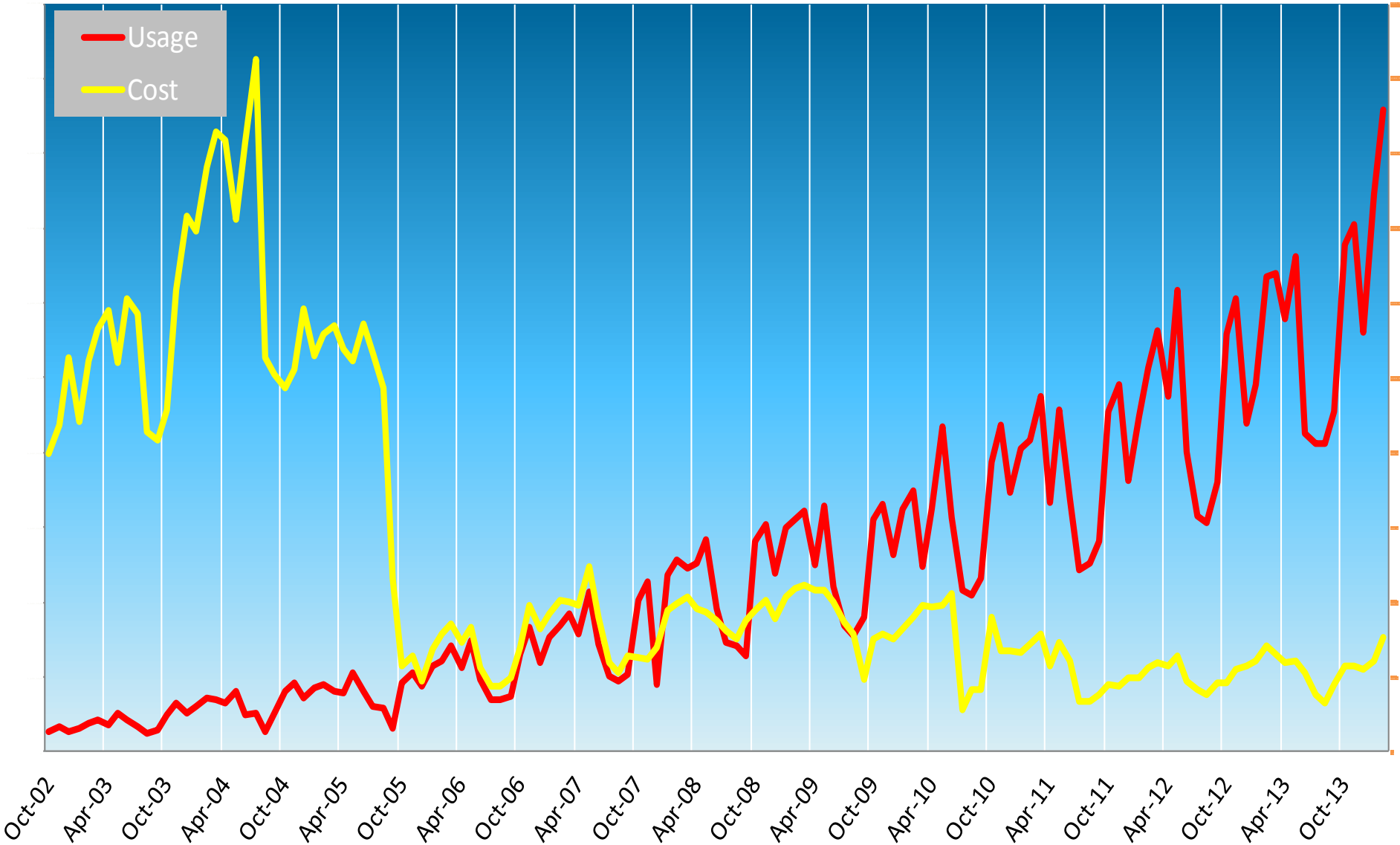# External Peers

Currently: 749G

Coming soon: 859G

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~300 external peers

T'house North

- Akamai
- Google
- VM
- BTnet
- BBC
- NetrinoUK
- Microsoft
- Limelight
- BBC (games)
- Microsoft
- Init7
- Bogons
- Globelynx
- aql Janet 3G
- InTechnology
- RM Education
- Updata
- Logicalis UK
- Pipex
- INUK
- Voicenet
- Virgin Radio
- LINX multicast

Global Transit Teliasonera

Global Transit GTT

Telecity HX

- Google
- Akamai
- VM
- NetrinoUK
- Amazon
- Limelight
- Redstone
- TMnet
- Datahop
- Pathe News
- Gamma
- NHS

LINX

GÉANT

GÉANT+

Glasgow Core Pop

BBC (games)

HEAnet

Manc'r

- IXManchester
- BBC (games)
- Gamma
- Akamai
- Exa Net
- Synetrix
- Edge-IX
- InTechnology
- One Connect
- VM
- NHS
- Google

Global Transit Level3

Legend:
- 100Gbit/s (magenta)
- 10Gbit/s (red)
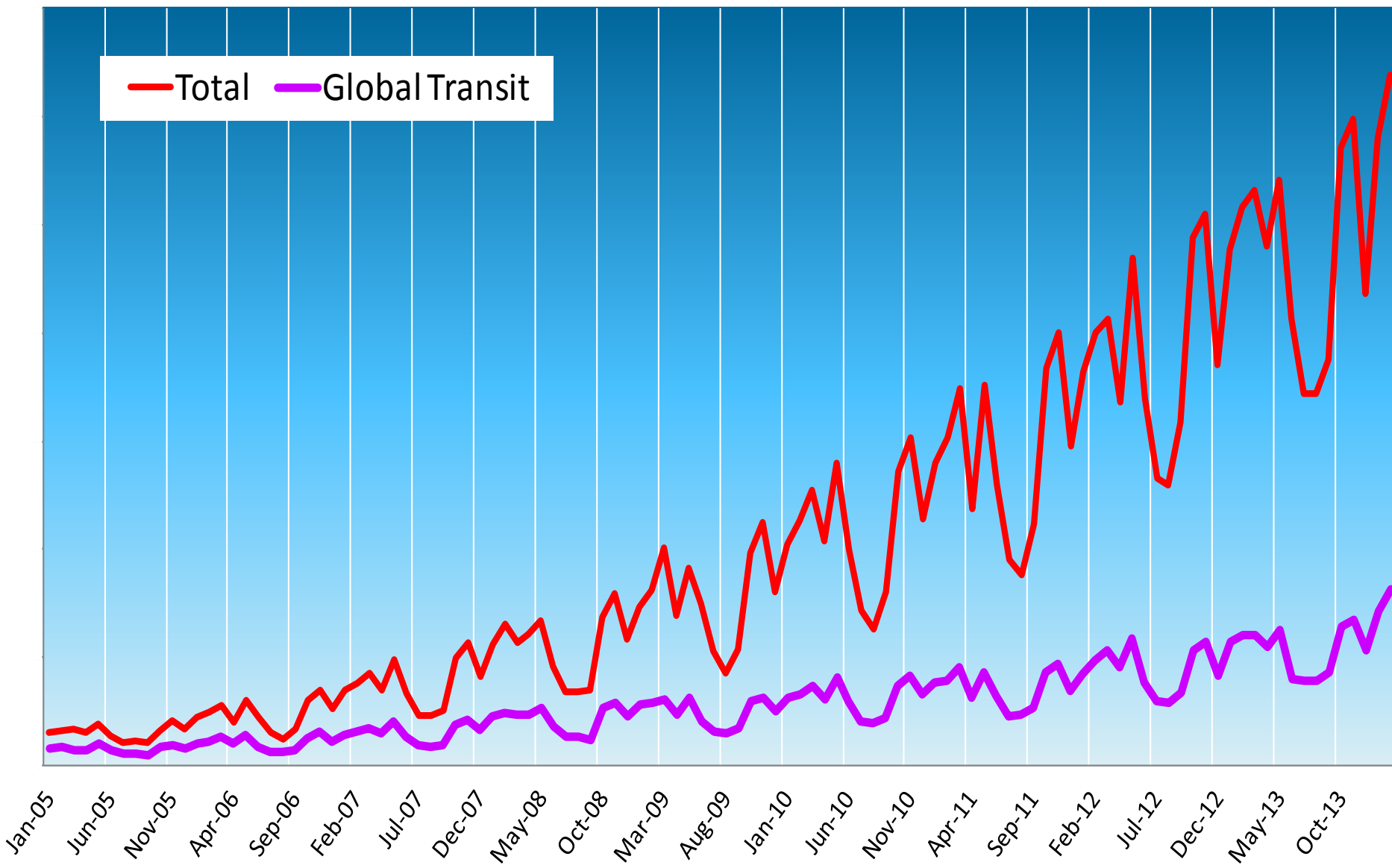- 1Gbit/s (blue)

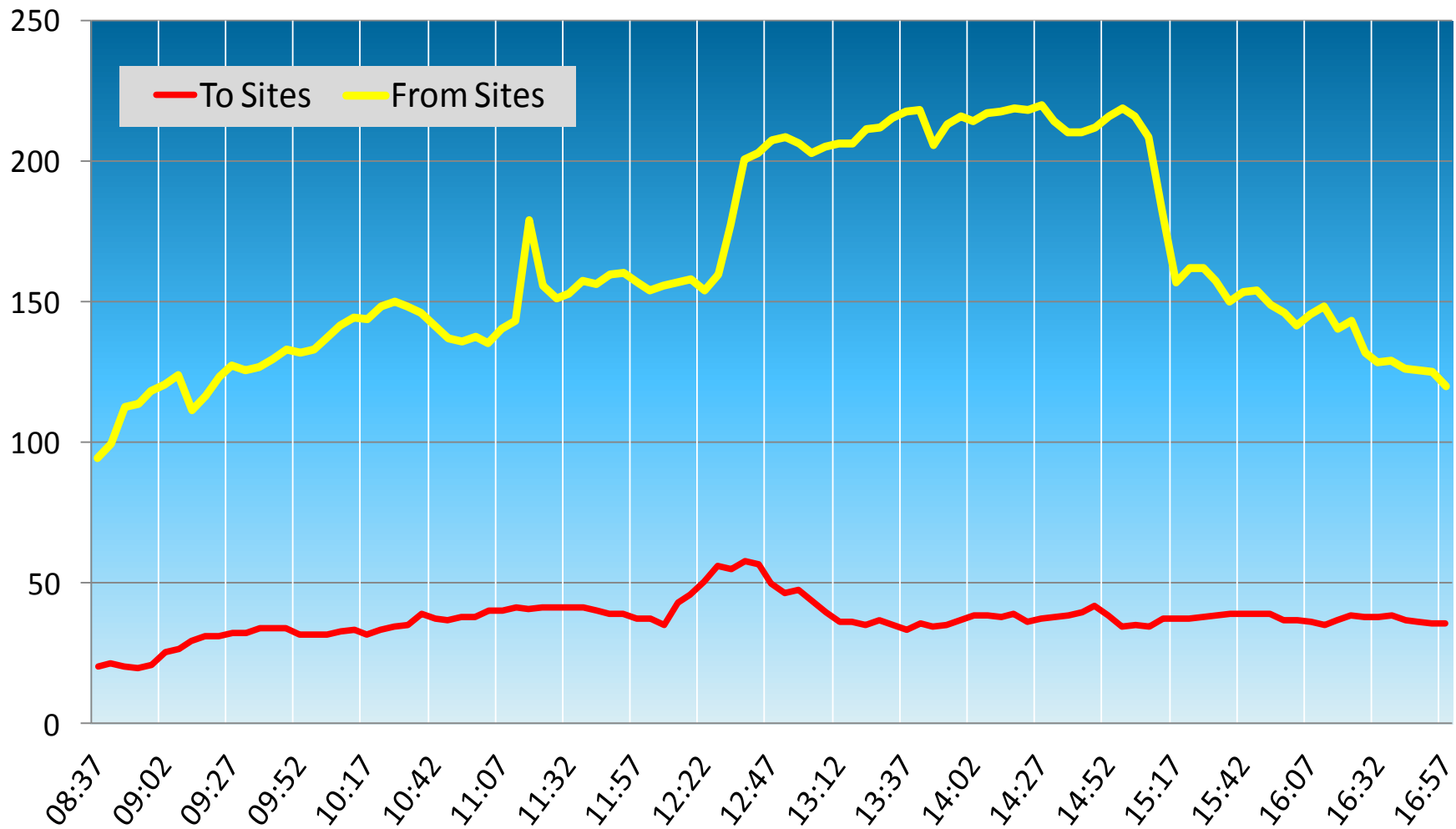# Global transit usage/cost

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External traffic

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External traffic 200Gbit/s sustained peak!

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10 March 2014
Apple IOS 7.1 released.

It shouldn't happen at Christmas...

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Christmas 2013...   (remember the weather?)

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Christmas Troubles...

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24th: 00:20   Loss of connectivity.

02:07   Fibre break between
        Andover & Southampton.
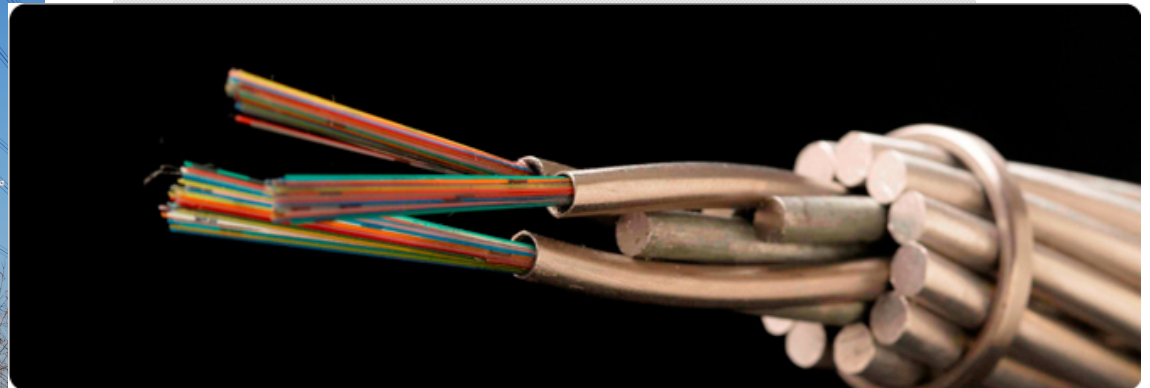
07:47   Helicopter survey.

12:05   Break at Poulton Park.

Peppa Pig World

- Overhead Power Ground Wire (OPGW).
  - Bonds pylons to earth.
  - Protects against lightning.
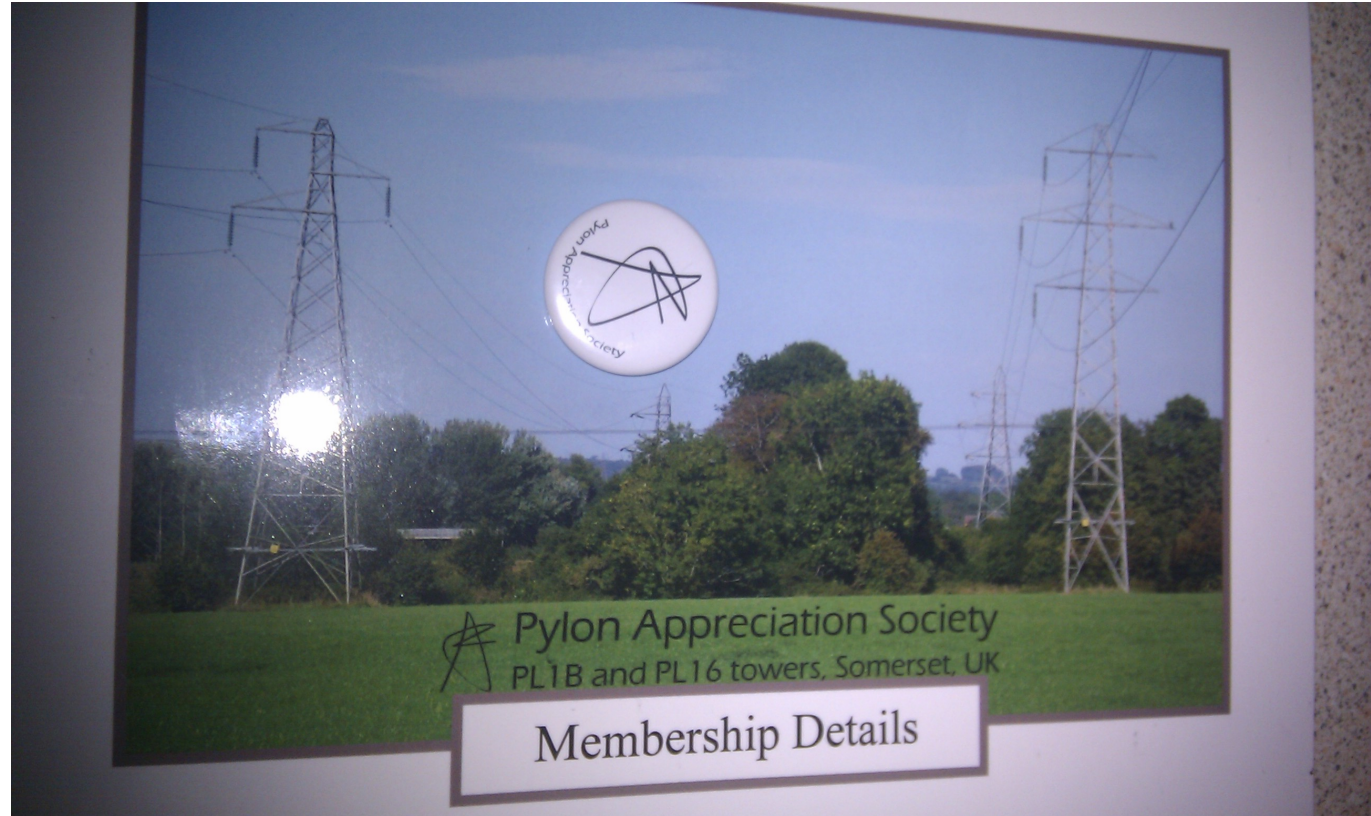
- Optical OPGW (OOPGW)
  - Also carries fibre.

Type L6 suspension tower

Multi Loose Tube Type

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I made the mistake of asking John Seymour (Head of Network Operations)

The Pylon Appreciation Society.... (really!)

How do I know so much about pylons?

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Pylon of the Month
All about electricity pylons and electricity supply

January 04, 2014

→ Pylon of the Month - January 2014

Blog powered by Typepad

Pylon Books

Brian Hayes:
Infrastructure: A
Field Guide to the
Industrial Landscape

Regular readers of this blog are probably looking at this month's pylon and wondering what is going on, but for the first pylon of 2014 I thought that it would be appropriate to feature the first artist to recognise the significance of the

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The problem...

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The problem in detail...

Christmas Troubles...

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24th: 00:20 Loss of connectivity.

02:07 Fibre break between Andover & Southampton.

07:47 Helicopter survey.

12:05 Break at Poulton Park.

13:30 Start tree removal.

17:30 H&S wait until 26th.

25th: It's Christmas!

26th: 12:00 Mobile platform for tree removal on site.

12:30 ...ground too soggy!

Eqpt needed to drop fibre ...all in use elsewhere.

15:40 Tree removed!

15:45 Two more fibre breaks found.

Christmas Troubles...

27th: 09:30 *Special* mobile platform arrived.

10:30 ...and it has a mechanical fault.

12:23 Third platform now on site.

13:07 ...it's not tall enough.

14:55 Taller platform on site.

16:22 First joint complete.

30th: 09:18 Second joint complete.

...third break needs a temporary road for the equipment.

13:03 Temporary road installed. ...too much wind

18:00 Wind dropped.

19:42 Final joint completed. **Service restored!**

Bradley Stoke

Froxfield

Andover

Southampton

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Janet ESISS...

Automated Accredited Penetration Testing
Manual Penetration Testing
Consultancy Services

For more information and charges contact service@ja.net

BOF: Wednesday 16:15
Lee Harrigan
Janet CSIRT

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Cloud

Microsoft Office 365 (May 13)
Google Apps for Education (Oct 13)
Arkivum Tape Storage (Jan 14)

Trans National Education pilot
launched in January 2014
with Educity in Malaysia

Parallel: Tuesday 16:15
Josh Howlett, Janet
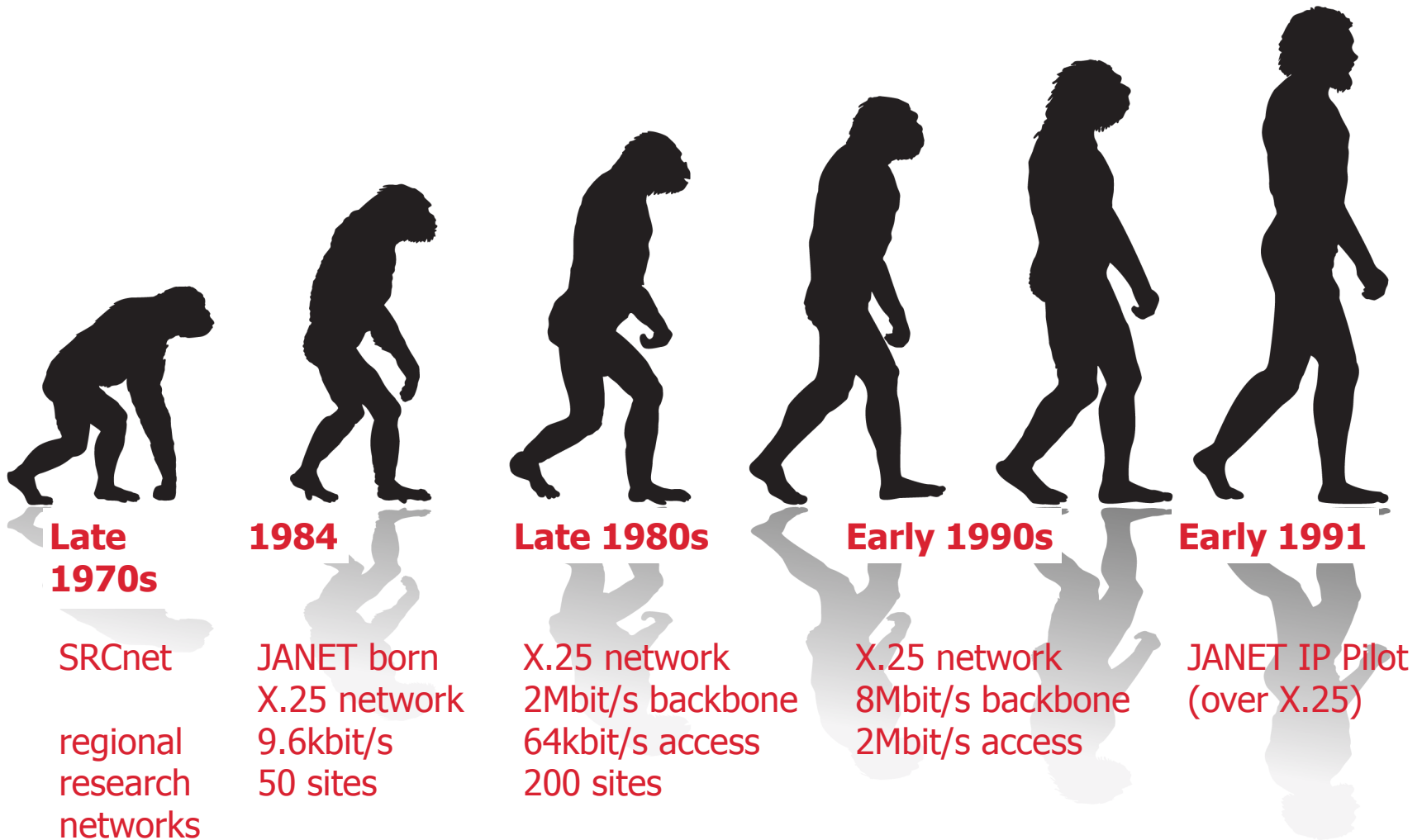**Jason Bain**, Newcastle

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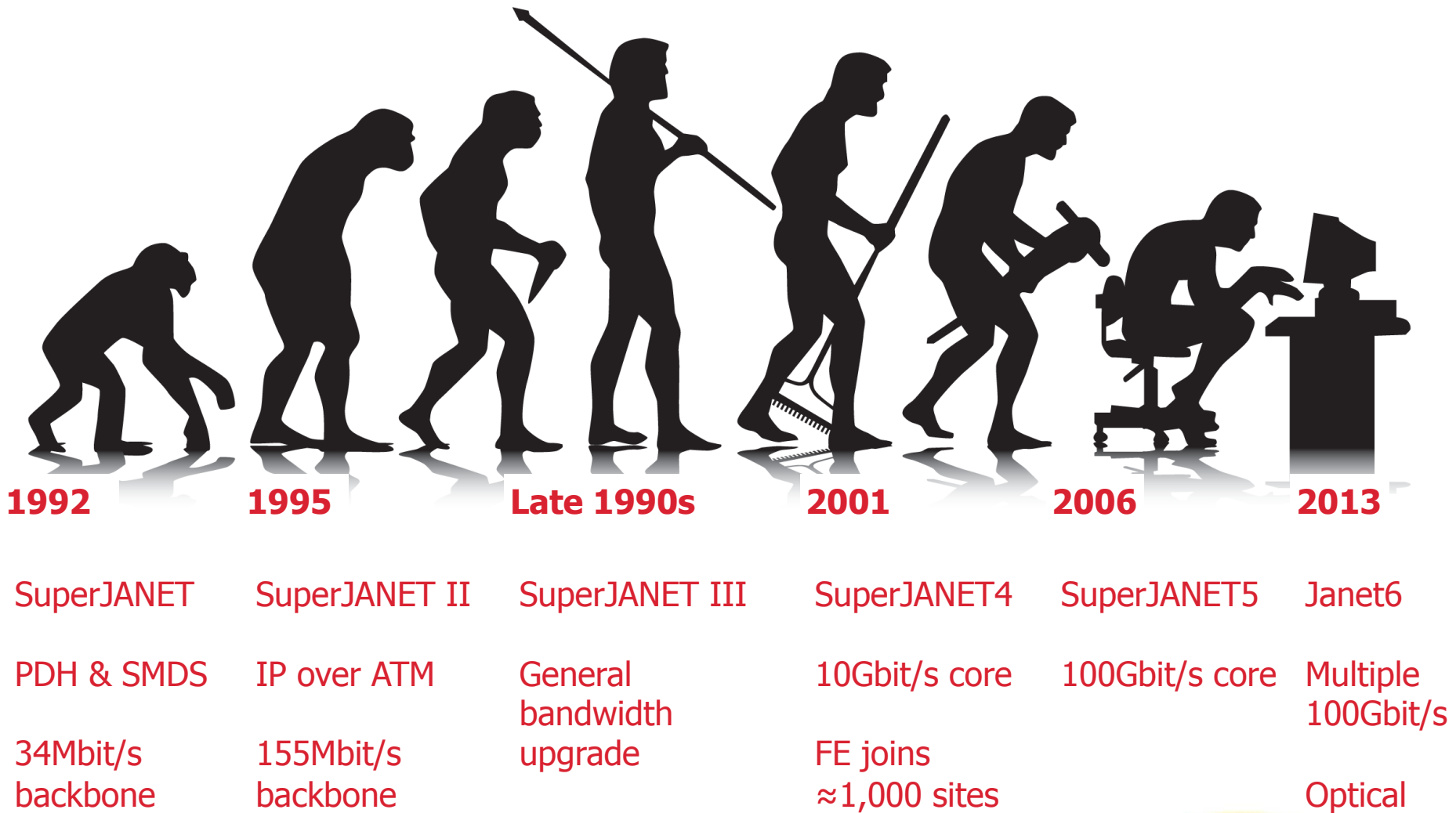- Access and Identity Management
- E-infrastructure Support

The Dawn of Janet

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Late 1970s

SRCnet

regional research networks

1984

JANET born
X.25 network
9.6kbit/s
50 sites

Late 1980s

X.25 network
2Mbit/s backbone
64kbit/s access
200 sites

Early 1990s

X.25 network
8Mbit/s backbone
2Mbit/s access

Early 1991

JANET IP Pilot
(over X.25)

Janet Comes of Age

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1992	1995	Late 1990s	2001	2006	2013
SuperJANET	SuperJANET II	SuperJANET III	SuperJANET4	SuperJANET5	Janet6
PDH & SMDS	IP over ATM	General bandwidth upgrade	10Gbit/s core	100Gbit/s core	Multiple 100Gbit/s
34Mbit/s backbone	155Mbit/s backbone		FE joins ≈1,000 sites		Optical

Reliability – 1986 style...

```
        Switch Statistics - Jan.86
        ----------------------------
```

Switch	Total	IPLs Unsched	Lost Time (mins)	% Avail %	MTBF Unsched (hrs)
RAL	11	8	109	99.76	93
ULCC	3	2	84	99.81	372
UMRCC	9	8	62	99.86	93
BATH	3	1	137	99.69	720
BIDSTON	0	0	0	100.00	-
CAMBRIDGE	1	1	65	99.85	744
DARESBURY	12	12	53	99.88	62
EDINBURGH	6	5	208	99.53	148
SWINDON	3	2	512	98.85	372

I.L.Smith   18/4/86

Numbers are traffic volume.

Guess the unit...

Mbytes/**day**.
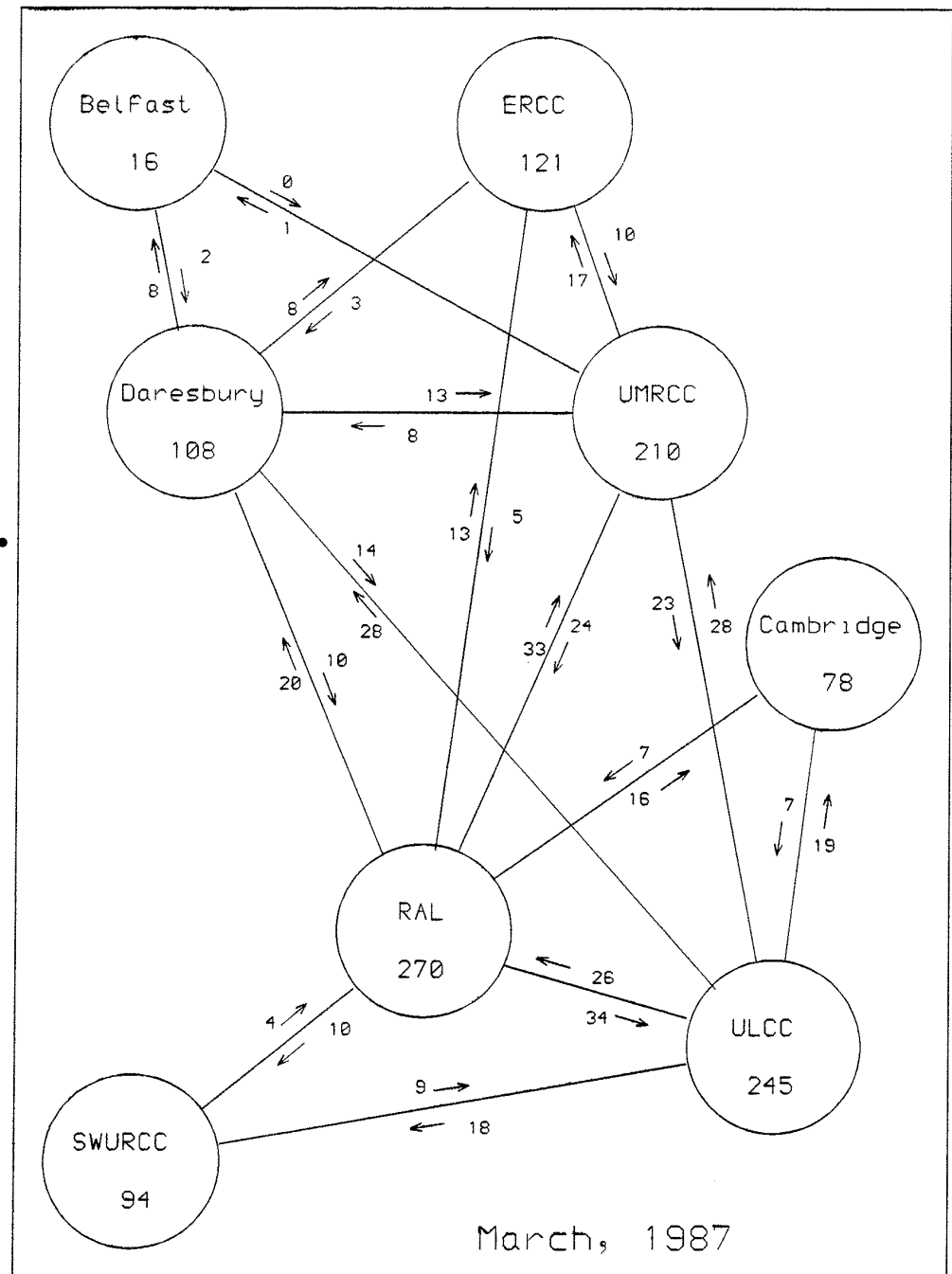
ALLOCATED   CURRENT

'Old' Region

Address Prefix   00000

Reserved for compatibility with previous schemes..
not to be reallocated.

ITEB   1410xxxx
Abery.   1411xxxxx
Windso   1412xxxxx
Merle   1413xxxx

Northern Region

Address prefix   00001

	ALLOCATED	CURRENT
UMRCC	0000100xxxxx	0000100xxxxx
Manchester	0000101xxxxx	000001020xxx
UMIST	0000102xxxxx	27, 2250
Keele	0000103xxxxx	000001102000
Lancaster	0000104xxxxx	000001101100
Liverpool	0000105xxxxx	000001030xxx
Salford	0000106xxxxx	000010600000
Daresbury	0000107xxxxx	00000100xxxx,00000101xxxx
Queens Belfast	0000112xxxxx	0000112xxxxx
NUU Coleraine	0000113xxxxx	0000113xxxxx
UU Jordanstown	0000114xxxxx	0000114xxxxx
Leeds	0000120xxxxx	000001080500 - 000001080999
Bradford	0000121xxxxx	000001080000 - 000001080499
Sheffield	0000122xxxxx	000001070xxx
Hull	0000123xxxxx	
York		000006xxxxxx
Aberystwyth	0000130xxxxx	000013000000
Bangor	0000131xxxxx	000001050xxx
ITE Bangor	0000132xxxxx	000003008xxx
133xxxxx → NERC Bidston	ste 0000133xxxxx	000003xxxxxx
Newcastle		000001500xxx
Durham	0000140xxxxx	00000150100,0000001502xxx
		2704
Lancashire Poly	0000145xxxxx	
Teesside Poly	0000146xxxxx	Trent Poly 144xxxxx
Huddersfield	0000147xxxxx	Liverpool Poly 143xxxxx

Central Region

Address prefix   00002

NRS   000014901000
Edinburgh } 15xxxxxx
             16xxxxxx

	ALLOCATED	CURRENT
Birmingham	0000200xxxxx	000001060xxx,2302,2605
Aston	0000201xxxxx	xxxxx
Nottingham	0000210xxxxx	000021000000,14
Loughborough	0000211xxxxx	2502
Leicester	0000212xxxxx	
BGS Keyworth	0000213xxxxx	000003007xxx
Leicester Poly		2307
Cambridge		000008xxxxxx
E Anglia		000008006xxx
LMB		000080080xx

tell Cambridge they can't
have 220xxxxx any
more.
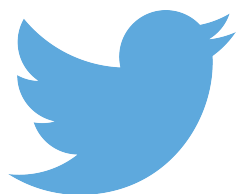Instead. 219xxxxx if want it

Celebrating 30 Years of Janet

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Take part in the competition
at   www.ja.net/nws42

Join us for
birthday cake
straight after
this plenary
session.

TICKET

TICKET

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30th
BIRTHDAY
EST 1984

http://

The future: join community.ja.net

#nws42
@UKNetworkshop

Look back to the past on
the web! Dedicated area to
celebrate 30 years of Janet.

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Reinventing Janet videoconferencing – v-scene

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- Organise and schedule
- Interoperability
- Intuitive interface
- Automated testing

- Launching in July 2014

Supporting networked video

- Low latency video
- High definition video
- Streamed video
- Contribution video

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Plan

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eduroam

https://

- Reprocured CA
- Richer variety of certificates

The UK Access Management Federation

FOR EDUCATION AND RESEARCH

- Managed service

- Service launch 1H2015
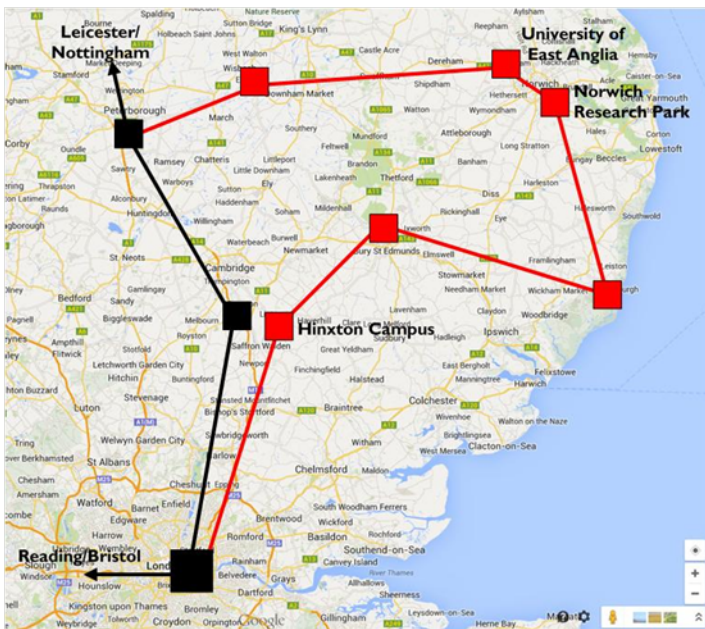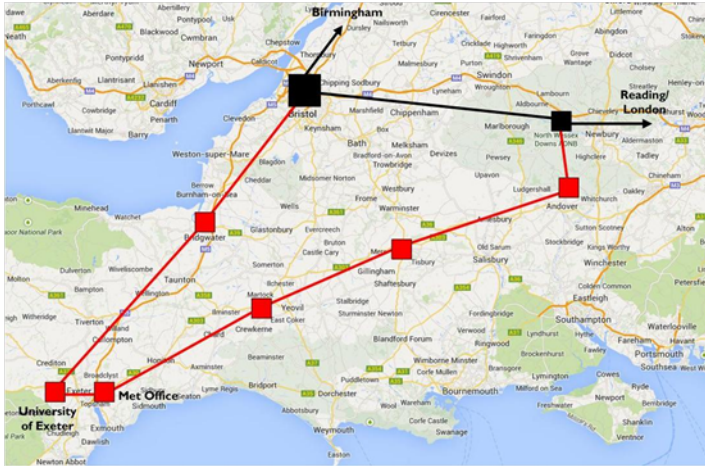- Azure Moonshot

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Connectivity to key national research facilities

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Connectivity to Janet6

- Hinxton Campus
- Met office
- Norwich research park
- Francis Crick institute

Janet Reach

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- Industry connectivity to Janet

- To support collaboration in use of e-infrastructure resources
  - Access to knowledge & experience
  - Access to resources (e.g. HPC)
  - Janet connectivity when at scale

- Compliant with state aid

Shared Datacentre

- Requirements driven by
  - Francis crick Institute
  - Kings College London
  - LSE
  - Sanger
  - UCL

- Framework to be established

- Janet the procurement authority and network provider

- 60% research systems, 40% enterprise system hosting

- Up and running in July

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Very busy last year...

Very busy year ahead...

We continue to do our best to serve the community.

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