



## Joint Engineering Team (JET) Meeting Minutes

National Coordination Office for Networking and Information Technology R&D (NCO/NITRD)  
490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024  
September 17, 2024, 12:00 – 2:00 p.m. ET  
This meeting was held virtually

### Participants

|                                   |                           |
|-----------------------------------|---------------------------|
| Hans Addleman, Indiana University | Ralph McEldowney, DREN    |
| Dale Carder, ESnet                | Linden Mercer, NRL        |
| Basil Decina, NRL                 | Aruna Muppalla, NASA/GSFC |
| Greg Factor, NASA/GSFC            | Michael Sinatra, ESnet    |
| Andrew Gallo, GWU & CARREN        | Patrick Smith, NSF        |
| Jonah Keough, Pacific Wave        | Nik Sultana, IIT          |
| Michael Lambert, PSC/3ROX/ACCESS  | Bobby Thompson, NIH       |
| Paul Love, NCO/NITRD              |                           |

**Proceeding:** This meeting was chaired by Ralph McEldowney (DREN).

I. **Action Items:** (none pending)

II. **Review of the Minutes of the August 2024 meeting:** No corrections were received. The final minutes have been posted on the JET's web page.

### III. **Networking and Antarctica: Pat Smith**

Planning and progress towards a submarine cable supporting the expanding bandwidth needs of the United States' main research station in Antarctica, McMurdo Station, was discussed. Also discussed were the current uses of both LEO & GEO satellites and networking to South Pole Station.

IV. **Operational Security Round Table:** No updates this month.

### V. **Network roundtable**

#### A. CARREN (Andrew Gallo):

- a. No updates from CARREN this month.
- b. MANRS is in the midst of the development of the MANRS Plus program. The steering committee is discussing formalizing the standards development process. They are discussing life cycle in the process.

#### B. DREN (Ralph McEldowney):

- a. Having just held its Technical Interchange Meeting, DREN is now ramping up the planning for its Hawaiian Intranet Consortium (HIC) meeting in January. Though

final details are still to be resolved, the HIC will be held on Oahu, most likely in the last week of the month.

- C. ESnet (Dale Carder and Michael Sinatra): Nothing to report on today.
- D. International Networking at Indiana University (Hans Alderman):
  - a. TransPAC is stable. Its 100G circuit is normal.
  - b. NEA3R's 400G between MAN LAN and Amsterdam should be operational by mid-October in time to support traffic for SC24. This circuit rides on the AEC-2 cable.
- E. SCinet (Hans Alderman):
  - a. Just 61 days until SC24 opens, about 40 days until SCinet volunteers arrive for the start of staging the temporary network.
  - b. This year 8.5 Tb is anticipated for the show, a just over a 25% increase from last year. Much of this capacity is over 400G paths.
  - c. More and more Network Research Exhibits are coming in with the count now around three dozen. These submissions include:
    - i. The Event Horizon Telescope with an astronomy demonstration.
    - ii. The Poznan Supercomputing and Networking Center in Poland with a quantum demonstration.
- F. NASA/GSFC (Aruna Muppalla): Work continues getting ready for SC24.
- G. NIH (Bobby Thompson): Nothing new to report today.
- H. NRL (Linden Mercer):
  - a. NRL is working to get ready for SC24 and is having some good results. It has been able to move data disk to disk at 400G from the JBBDT facility in McLean, VA, to SL in Chicago, IL, and back.
  - b. NRL is having some challenges with its DR4 optics in servers. If anybody has experience with them, please get in touch.
  - c. NRL is looking forward to using as many of the terabits Hans mentioned as possible.
- I. Pacific Wave (Jonah Keough):
  - a. The Pacific Wave (PW) team is making good progress on all of its 400G connections.
  - b. Also, good progress on PW's prepping for SC24 as many trans-Pacific experiments will be coming through its infrastructure.
- J. PSC/3ROX/ACCESS (Michael Lambert): No updates for PSC, 3ROX or ACCESS this month.

## VI. Exchange Points Round Table

- A. PNWGP (Jonah Keough): No update for this month.
- B. StarLight (Joe Mambretti via email):
  - a. This week the StarLight (SL) and MREN communities are participating in the IEEE International Conference on eScience in Osaka, Japan, as well as in the co-located Global Research Platform Workshop.
  - b. SL and MREN are continuing preparations for SC24, especially through collaborative provisioning projects with SCinet and other national and international partners.

- c. SL and MREN are leading, supporting, or participating in 25 of SCinet's Network Research Exhibitions (NRE).
- d. Two 1.2 Tb paths have been provisioned between SL and the Joint Big Data Testbed (JBDT with the NASA Goddard Space Flight Center and Naval Research Lab) in McLean, VA. One will use a 2x600G path using Waveservers. The second 1.2 Tb path is based on 3x400G over the FABRIC/ESnet6 infrastructure.
- e. A 1.2 Tb path is being provisioned between SL and the SC24 venue in Atlanta, GA.
- f. A 1.6 Tb path is being provisioned between the JBDT and the SC venue.
- g. These terabit/second services in part are motivated by planned growth in data intensive science workflows such as LHC's Tier 1 (and some Tier 2) locations where each site is anticipated to need at least a Tb.
- h. The SL community is exploring options for integrating a 400G path from US sites to a National Research Platform 400G node at CERN as well as to related testbed DTNs at that location.
- i. The 400G national NA-REX, through a combination of existing and new circuits, is being integrated into SCinet.
- j. SL will utilize a FABRIC node that will be integrated into SCinet at the venue.
- k. With research partners, SL is developing 400G WAN services using deep buffer switches and Gen 5 DTNs with 400G SmartNICs. NREs will include demonstrations of SDN, SDX, AutoGOLE/SENSE, scitags, SciStream, National Research Platform, P4, CMS software stacks, and Chameleon/FABRIC integration services. ESnet High Touch measurements and analytics will also be demonstrated. Another set of demonstrations led by the ESnet testbed community will showcase workflow pipelining using in-net processors to avoid requiring the traffic to leave the net and then be reinserted. Recently SL agreed to support a NRE GÉANT international quantum networking project that will be showcased at SC24.

### **Meetings of Interest 2024-2025**

|                 |   |
|-----------------|---|
| Sep 16-19       | <a href="#">Fifth Global Research Platform Workshop</a> at <a href="#">IEEE eScience</a> , Osaka, Japan |
| Sep 17-19       | <a href="#">The Quilt Fall Meeting</a> , Hartford, CT   |
| Oct 9-10        | <a href="#">CANARIE Summit</a> , Ottawa, Canada   |
| Oct 21-23       | <a href="#">NANOG 92</a> , Toronto, ON Canada   |
| Oct 24-25       | <a href="#">ARIN 54</a> , Toronto, ON Canada  |
| Oct 28 – Nov 1  | <a href="#">RIPE 89</a> , Prague, Czech Republic  |
| Nov 2-8         | <a href="#">IETF 121</a> , Dublin, Ireland  |
| Nov 17-22       | <a href="#">SC24</a> , Atlanta, GA  |
| Dec 9-12        | <a href="#">Internet2 Technology Exchange</a> , Boston, MA  |
| Jan 19-22, 2025 | <a href="#">PTC25</a> , Honolulu, HI  |
| Jan 29-30, 2025 | <a href="#">HIC</a> , Honolulu, HI  |
| Feb 3-5, 2025   | <a href="#">NANOG 93</a> , Atlanta, GA  |
| Feb 3-6, 2025   | <a href="#">The Quilt Winter Meeting</a> , Tempe, AZ  |
| Mar 3-7, 2025   | <a href="#">APAN59</a> , Yokohama, Japan  |

Mar 10-13, 2025 [SCA25](#), Singapore  
Mar 15-21, 2025 [IETF 122](#), Bangkok, Thailand  
Mar 27-30, 2025 [ARIN 55](#), Charlotte, NC  
Apr 2025, wk. of 7th [ESnet Confab25](#), San Francisco Bay Area, CA  
Apr 28-May 1, 2025 [Internet2 Community Exchange](#), Anaheim, CA  
May 12-16, 2025 [RIPE 90](#), Lisbon, Portugal  
Jun 9-13, 2025 [TNC25](#), Brighton, UK

### **Next JET meetings**

*Note: It is anticipated that most JET meetings will remain virtual for the foreseeable future*

Oct 15, 2024 12-2 p.m. ET  
Nov 20, 2024 10-11:30AM ET. This will be a hybrid meeting held in conjunction with SC24 in Atlanta, GA. The meeting will be in room A-313 of the Georgia World Congress Center, 285 Andrew Young International Blvd NW, Atlanta, GA 30313  
Dec 17, 2024 12-2 p.m. ET *n.b. This meeting will be held only if needed.*