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A Recipe for Success: Collaborative Approaches to Cybersecurity

Jim Ghabbane, President and CEO | TICAL 2019 | Cancun, Mexico

Let's connect!
@jghadbane

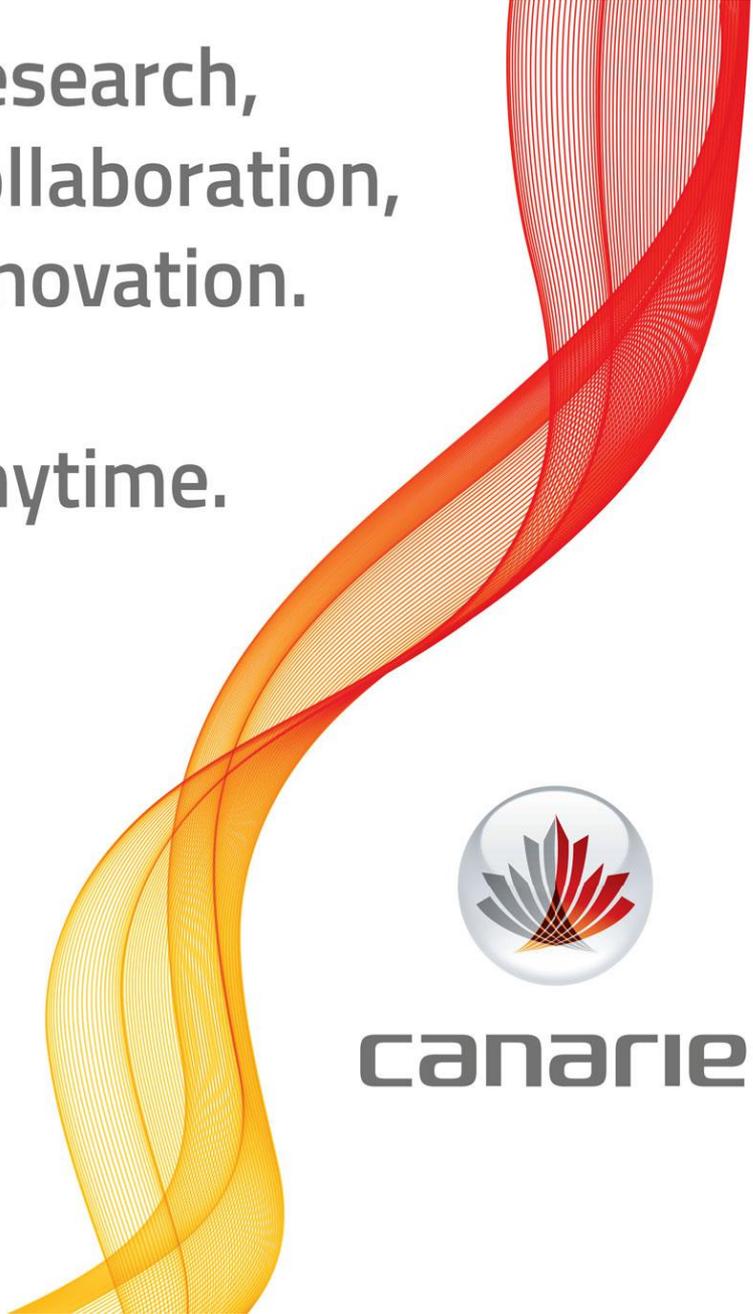
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Research,
Collaboration,
Innovation.

Anytime.



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Brief History of CANARIE

1993:

CANARIE created;
programs support,
application
development

1998 – 2003:

CA*net 3
launched: world's
fastest research
network

2000 – 2005:

E-learning,
e-business,
e-health
programs

2007 – 2012:

Research
Software, Cloud
Computing,
Canadian Access
Federation

2012-2019:

100G network
upgrade, Security,
Research Data
Management,
Research Data
Canada

And today...

Millions of Canadians
have access to the
CANARIE network

1200+ Canadian SMEs
use CANARIE's DAIR
cloud service

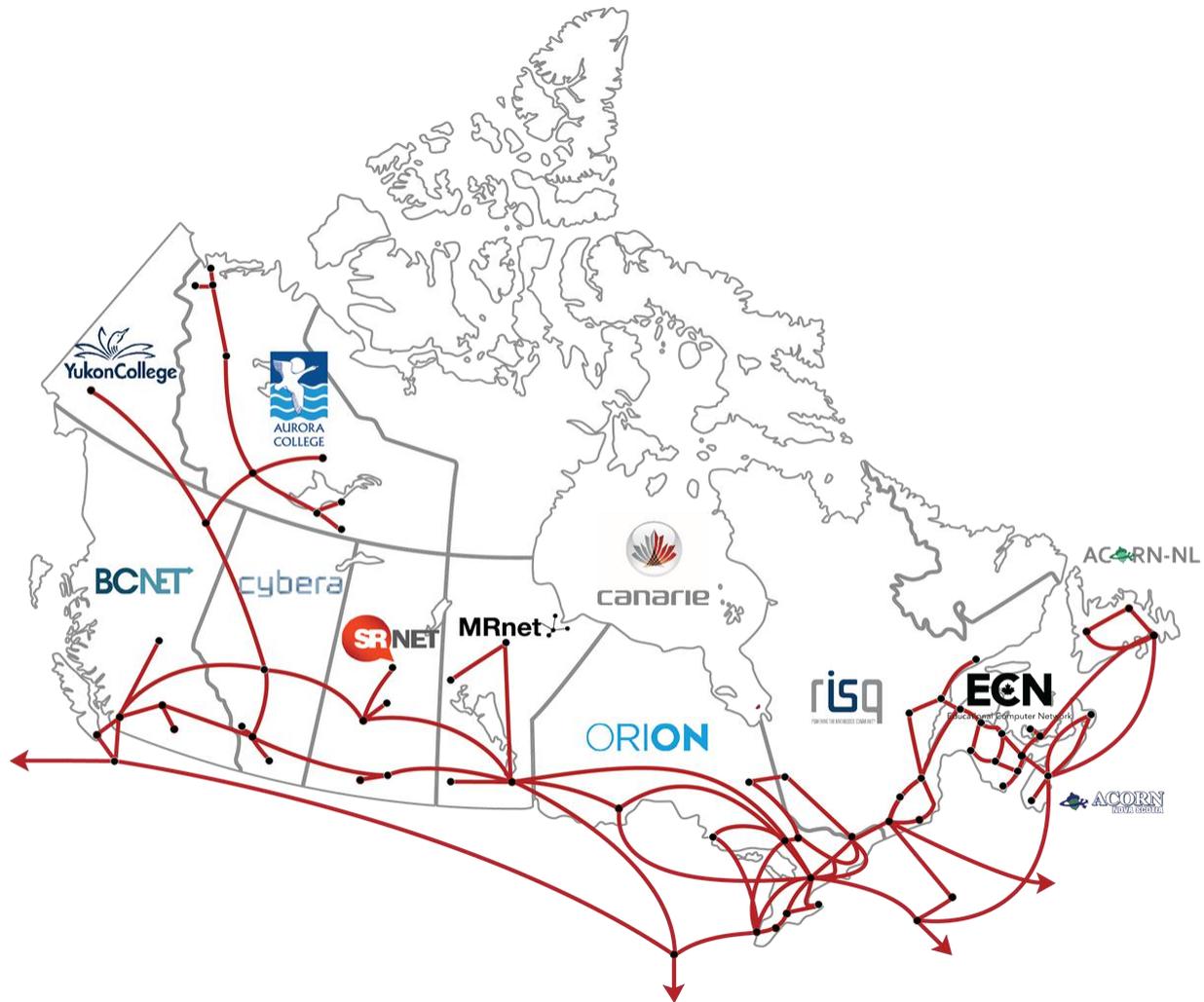
100+ cross-disciplinary
software tools, free for use by
the scientific research
community

312,000 Terabytes of data
carried by the CANARIE
network in 2018/19

31,000 KM coast-to-coast
ultra-high-speed research
and education network

1 million+ eduroam inter-
institutional log-ins
supported by CANARIE on
peak usage days

Canada's NREN



Updated February 2018

Partners in Canada's NREN



What does CANARIE do?

1. Operates and evolves the CANARIE network (national and global connectivity)
2. Coordination of the Canada's National Research and Education Network (NREN)

This builds Canada's world-class NREN by leveraging the CANARIE backbone network to link 10 provincial + 2 territorial networks.

3. Provides IT services: eduroam, Federated Identity Management, DAIR
4. Funds the development of IT tools (research software, research data management tools)
5. Promotes private sector innovation (DAIR, CENGN)
6. Represents Canada internationally

HOW DOES THAT

EVEN WORK

MEMESCRIBPTOR.COM

Why does Canada's NREN Federation work?

- > Role clarity among federation members
 - CANARIE and provincial and territorial partners
- > Funding models align with roles
 - Federal partner (CANARIE) funds federal-jurisdiction initiatives, partners fund provincial/institutional-jurisdiction initiatives
- > CANARIE as Independent Federation operator
 - Aligns members towards a common path for evolving the NREN
 - NREN Strategic Plan
 - Multi-faceted governance model
 - Matching funds for national projects

DIVERSITY



DEMOCRACY

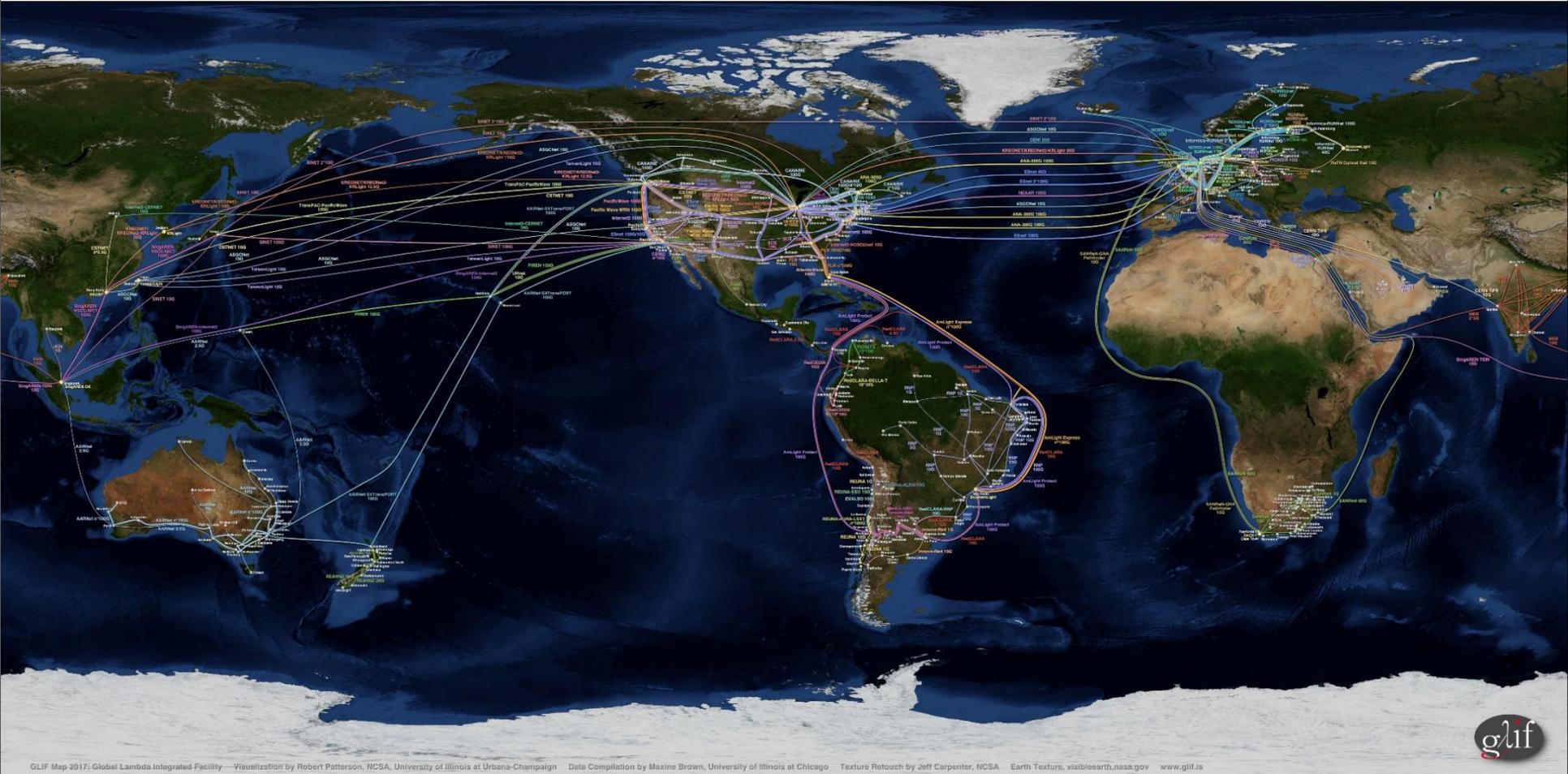


DEPENDENCY



When you embrace diversity,
democracy, and dependency,
you guard against dictatorship...

Global Research and Education Network (GREN)



Membership of NREN CEO Forum

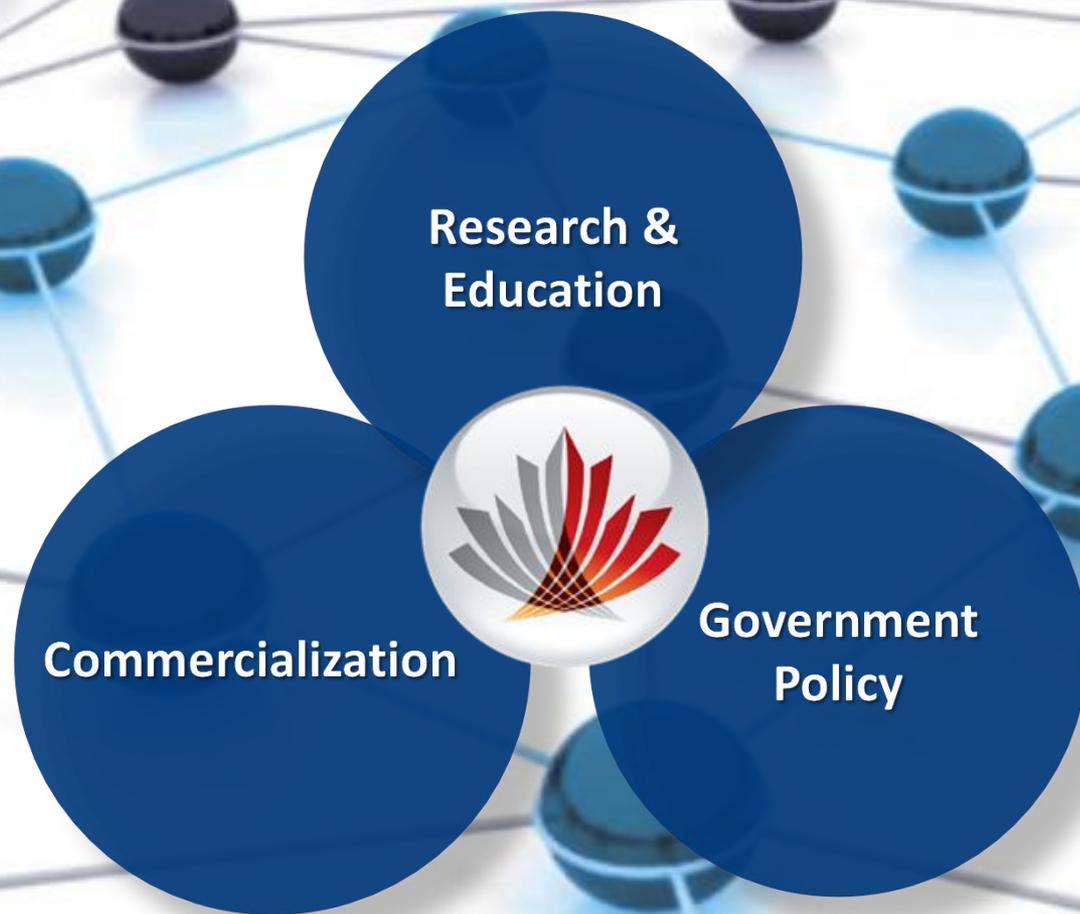


...and you end up with initiatives that actually serve their populations.





CANARIE's unique position to affect change



CANARIE: Building cybersecurity capacity through collaboration and partnerships



Higher Education

- Research expertise
- Talent pipeline



Industry & Consortia

- Talent needs
- Funding & in-kind contributions
- Service/solution delivery
- Channels to market



Government Departments & Agencies

- Policy frameworks
- Use case challenges
- Procurement opportunities



Economic Development & Innovation Organizations

- SME funnel
- Incubation & commercialization support
- Investment attraction

Strategic pillars for a cybersecure Canada

Improving
Cybersecurity Practices



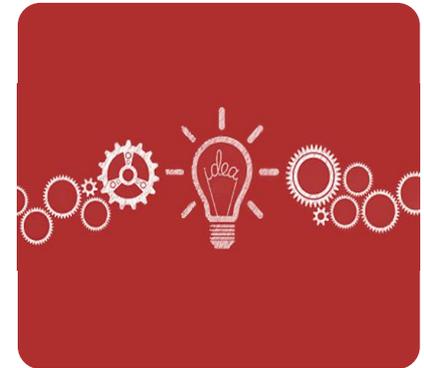
Closing the
Talent Gap



Leveraging Academic
Research Capacity



Supporting Innovation &
Industry Development



Joint Security Project

Phase 1 – 40 institutions (2017/18)

Inputs:

- > Common network monitoring software installed
- > Agreement to share data
- > Security data visualization platforms

Outputs:

- > Cross Canada collaboration and dissemination of information
- > Expertise sharing and expertise building
- > Heightened awareness of threat landscape and response/mitigation strategies

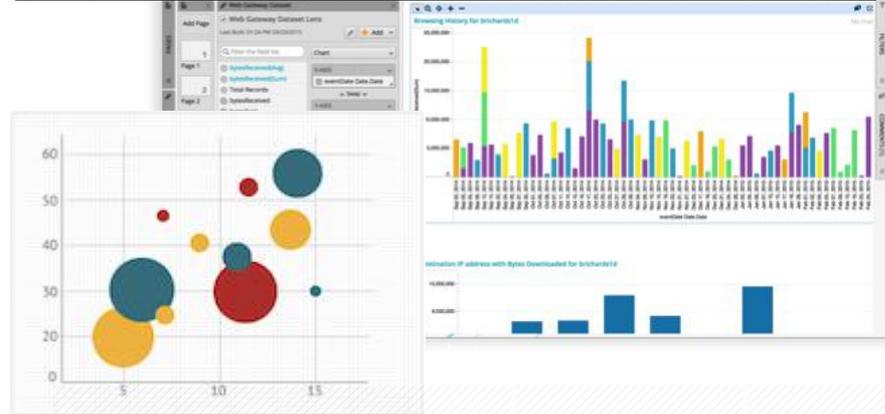
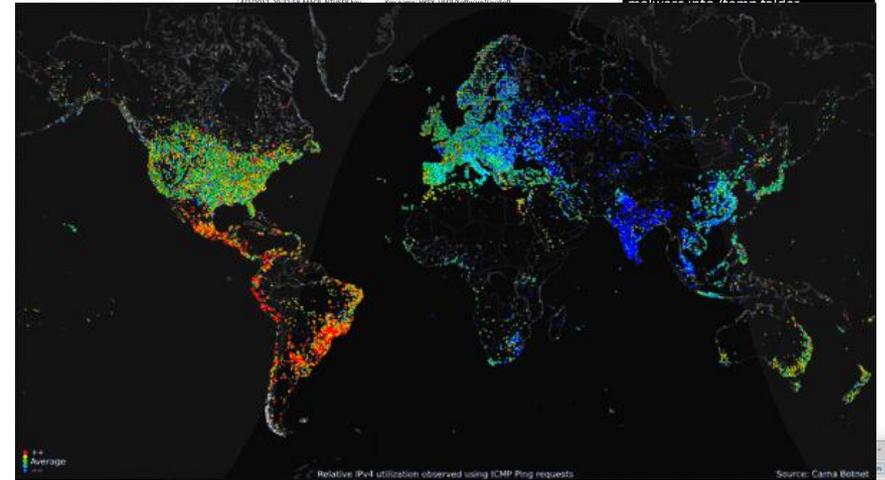
Phase 2 – 160 institutions (current)

Spearphishing Attack SuperTimeline

Spear Phish Email Received w/Java Applet attack w/PDF and link (Email was about IRS w-2 tax forms)
The victim clicked on the link <http://bit.ly/GEUMQQ>

4/2/2012 20:32:50 M.C.B. Firefox 3 History http://203.207.245.179/ Internal Revenue Service Account: 21 enabled from http://bit.ly/GEUMQQ (URL not typed directly) type: REDIRECT_PERMANENT
4/2/2012 20:32:50 M.C.B. Firefox 3 History http://203.207.245.179/ Internal Revenue Service Account: 21 enabled from http://bit.ly/GEUMQQ (URL not typed directly) type: REDIRECT_PERMANENT
4/2/2012 20:32:57 M.C.B. NTFS SMTF C:/WINDOWS/System32/Deployment
4/2/2012 20:32:57 M.C.B. NTFS SMTF C:/WINDOWS/System32/Deployment
4/2/2012 20:32:57 M.C.B. NTFS SMTF C:/WINDOWS/System32/Deployment
4/2/2012 20:32:57 M.C.B. NTFS SMTF C:/WINDOWS/System32/Deployment

Java Applet attack hits – Download of



NREN SIEM Deployment Project

People:

10 Security Analysts hired across Canada, initial training completed



Process:

Collaborative start to a coordinated security framework



Technology:

SIEM appliance jointly procured, widely deployed

Canadian Shared Security Operations Centre*



*Project led by University of Toronto; CANARIE providing support

CANSSOC:

Developing threat mitigation and response strategies and building expertise



NREN SIEM

Project:

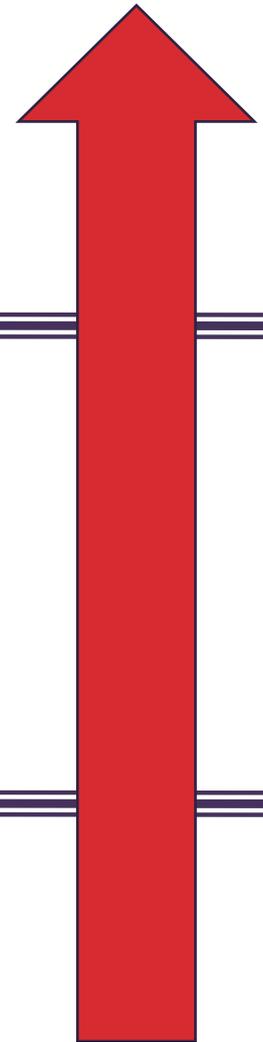
Securing the NREN and developing a cohort of NREN security specialists



Joint Security

Project:

Enabling sharing of threat info and development of a community of security specialists





Preguntas?



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