



# GEC19 GMOC Update

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# GMOC UPDATES SINCE GEC18

- ✓ GMOC Development Project Updates
- ✓ New GENI Racks/Regionals Reporting to GMOC
- ✓ GMOC's GENI Network Metrics
- ✓ LLR Overview and Recent Exercise

# GMOC DEVELOPMENT PROJECT UPDATES

- ✓ UI improvements for Emergency Stop and LLR Requests
- ✓ Ability to lookup Project Owner data from Clearing House/Slice Authorities
- ✓ A couple of storyboards:

# SEARCH GENI RESOURCES BY IP/MAC ADDRESS

[Database](#) [Measurements](#)





GENI META-OPERATIONS CENTER

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Resource Name	Type	Operator	POP Name	Last Updated
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<a href="#">urn:publicid:IDN+openflow:foam:foam1.gpolab.bbn.com+datapath+06:b5:00:12:e2:b8:a5:d0 [Details]</a>	datapath	<a href="#">urn:publicid:IDN+gmoc.geni.net+organization+BBN</a>	<a href="#">urn:publicid:IDN+gmoc.geni.net+pop+gpolab [Details]</a>	2013-07-22 14:40:29


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# SLICE PROJECT OWNER SEARCH SUPPORT

[Database](#) [Measurements](#)




**gMOC** GENI META-OPERATIONS CENTER

Details for urn:publicid:IDN+ch.geni.net:pgeni-testing+slice+jtest

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**Details** Slivers Resources

Slice Details	
Operator Organization	<a href="urn:publicid:IDN+gmoc.geni.net+organization+BBN">urn:publicid:IDN+gmoc.geni.net+organization+BBN</a>
Principal Email	<a href="mailto:DUERIG@CS.UTAH.EDU">DUERIG@CS.UTAH.EDU</a>
UUID	88676421-a4b8-436b-8226-b792e41324db
Creator	<a href="urn:publicid:IDN+ch.geni.net+user+duerig">urn:publicid:IDN+ch.geni.net+user+duerig</a>
Created	2014-02-07 18:23:18
Expires	2014-03-22 23:59:59
Project	



Clearing House and Slice Authorities need to start sending data

# GENI REGIONALS REPORTING GMOC

- CENIC (COTN – California OpenFlow Testbed Network)
- UEN (Utah Education Network)
- SOX (Southern Crossroads)
- MOXI-CIC and MOXI-Indiana GigaPoP
- GpENI – Great Plains Environment for Network Innovation
- NYSErNet (New York)
- MAX GigaPoP – New InstaGENI Rack
- ICCN-MOXI (Illinois) \*
- StarLight FOAM AM \*



# GENI RACKS COMPLETED GMOC TURN-UP

## InstaGENI (21)

- ✓ BBN – GPO Lab Rack
- ✓ Utah
- ✓ Kentucky
- ✓ Northwestern
- ✓ Georgia Tech
- ✓ Clemson
- ✓ Kettering
- ✓ Princeton
- ✓ Kansas
- ✓ MAX
- ✓ NYU
- ✓ NYSERNet
- ✓ Missouri
- ✓ Illinois
- ✓ Wisconsin
- ✓ SOX
- ✓ Rutgers

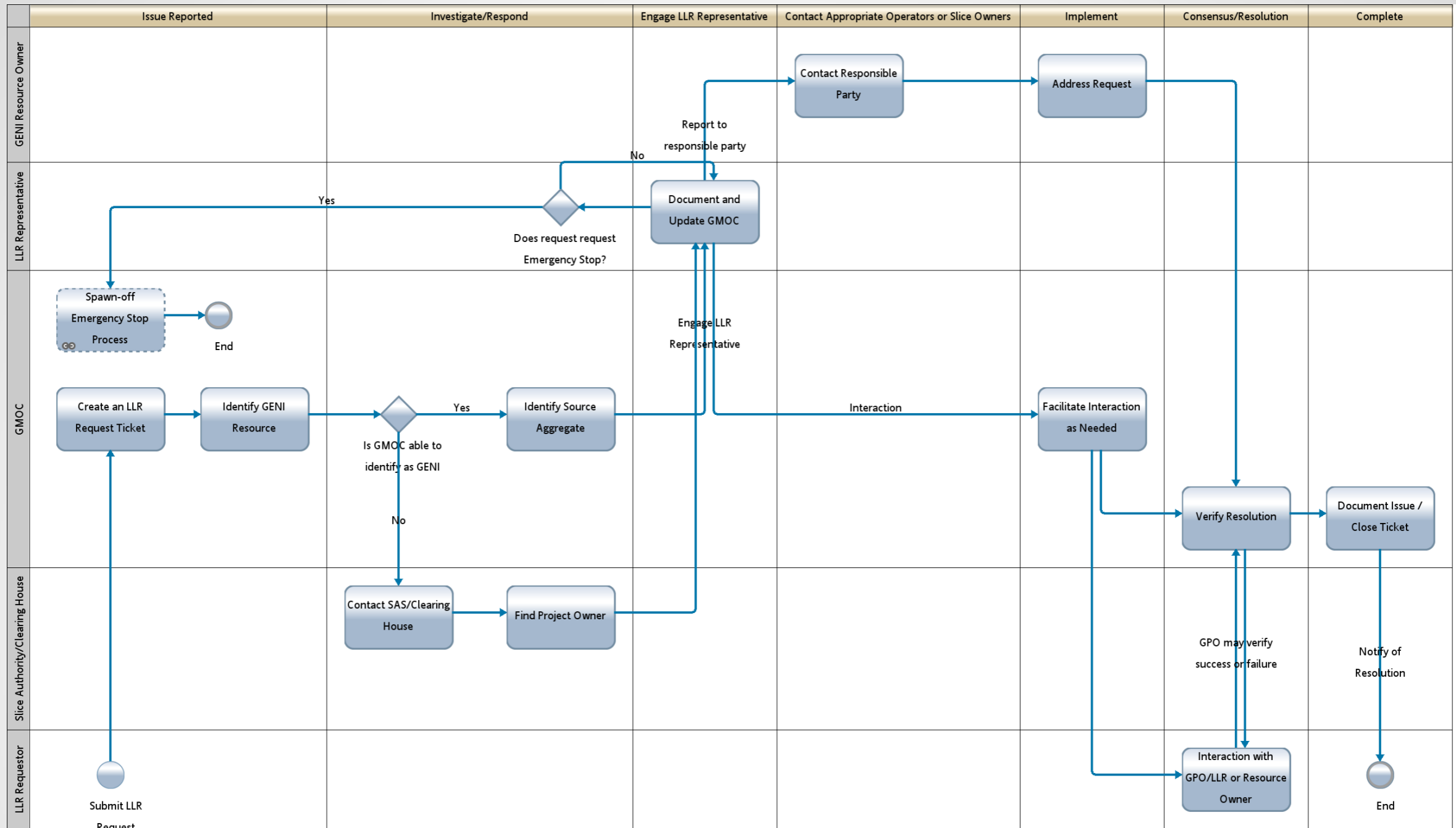
- ✓ **Stanford \***
- ✓ **Cornell \***
- ✓ **LSU \***
- ✓ **IU-MOXI \***

## ExoGENI (8)

- ✓ BBN – GPO Lab Rack
- ✓ RENCi
- ✓ FIU-SCIS
- ✓ UH - University of Houston
- ✓ **NCSU \***
- ✓ **UFL \***
- ✓ **OSF \***
- ✓ **UCD \***

\* New racks since last GEC

# GENI LLR REQUESTS PROCESS



## GENI LLR Procedure Workflow



# GENI LLR EXERCISE WITH INSTAGENI

GENI LLR Procedure Workflow – detailed document of LLR process

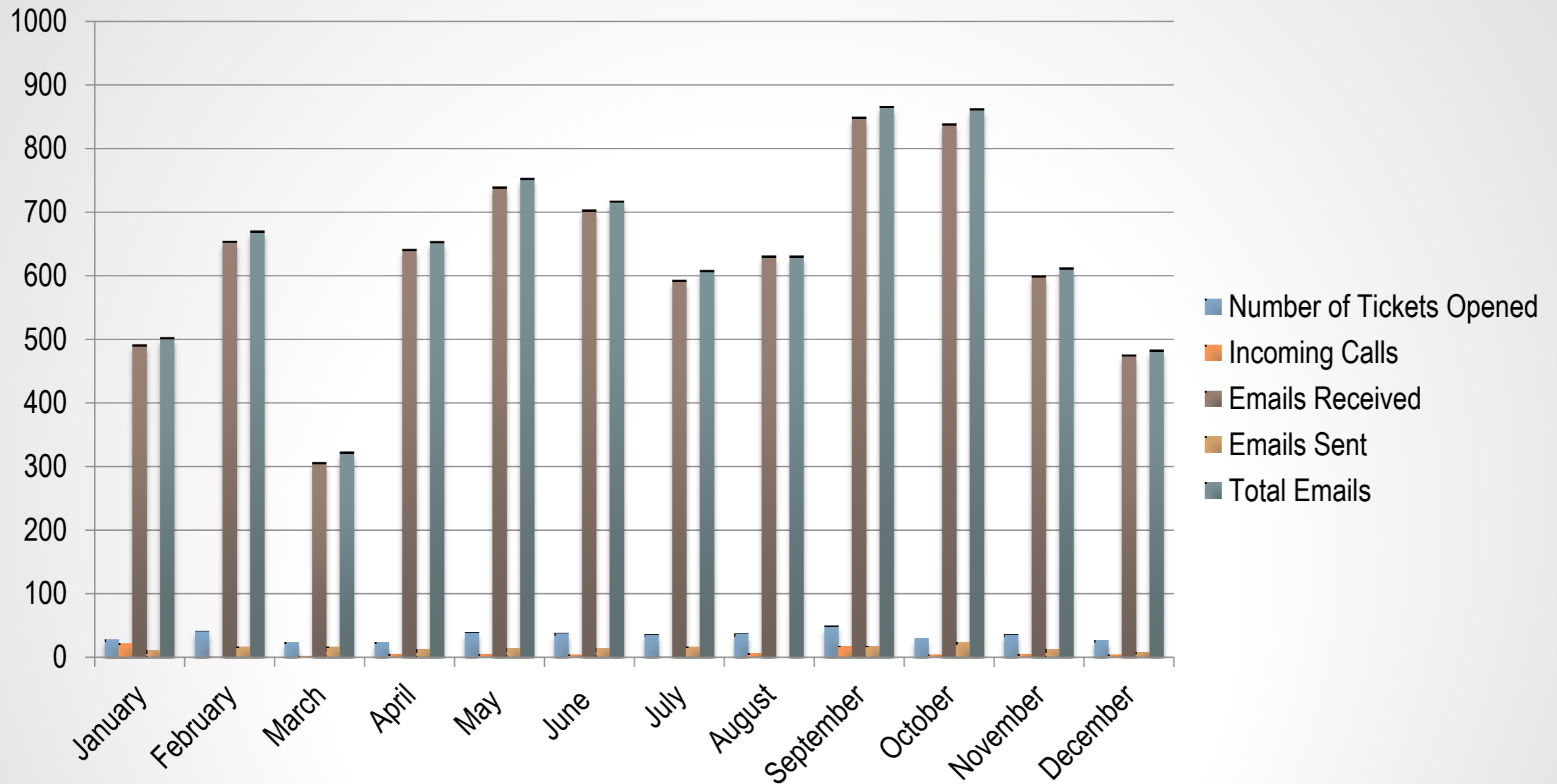
## Some Results/Thoughts:

- ✓ Over-all workflow works well – Participants: GMOC, GPO, Steve Schwab (LLR Representative and Jonathon Duerig (Utah)
- ✓ Need to Improve tools/data (IPs data within a slice)
- ✓ Need for historical data – i.e. Search for by timestamp and IP/MAC
- ✓ InstaGENI – 3 “Panic Button” Levels to isolate resources

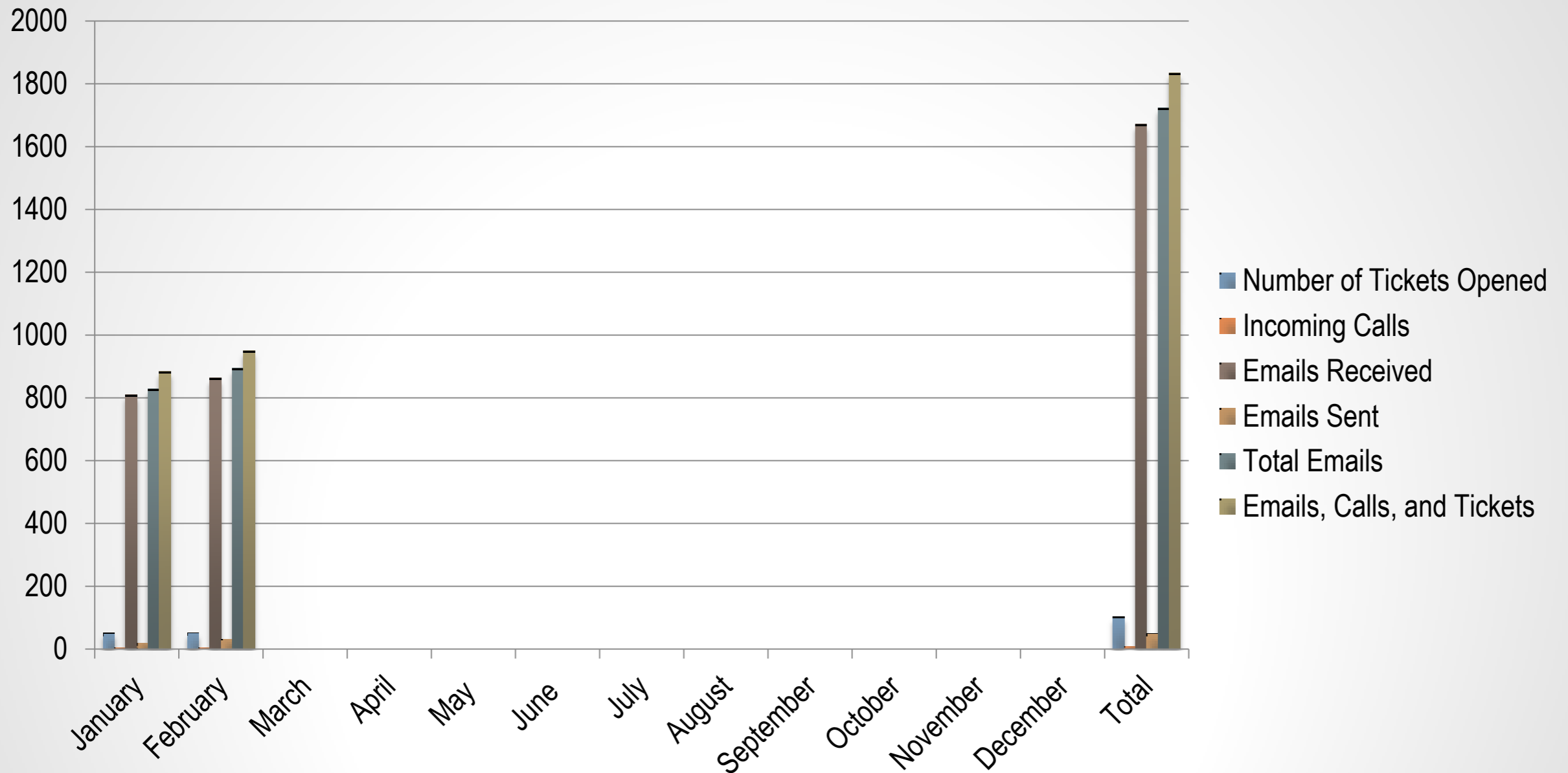
## Next steps?

- ✓ Test with multi-site involvement. Rack Admin and Slice Authority
- ✓ Do a test with ExoGENI
- ✓ Further Develop LLR Communications during an event.
- ✓ Discuss needs with with GMOC-Dev, GPO and Rack Teams
- ✓ Determine How to deal with International GENI Resources and Provisional Racks. (SAs/Clearing House)
- ✓ Identify, recruit, train additional GENI LLR Representative(s)

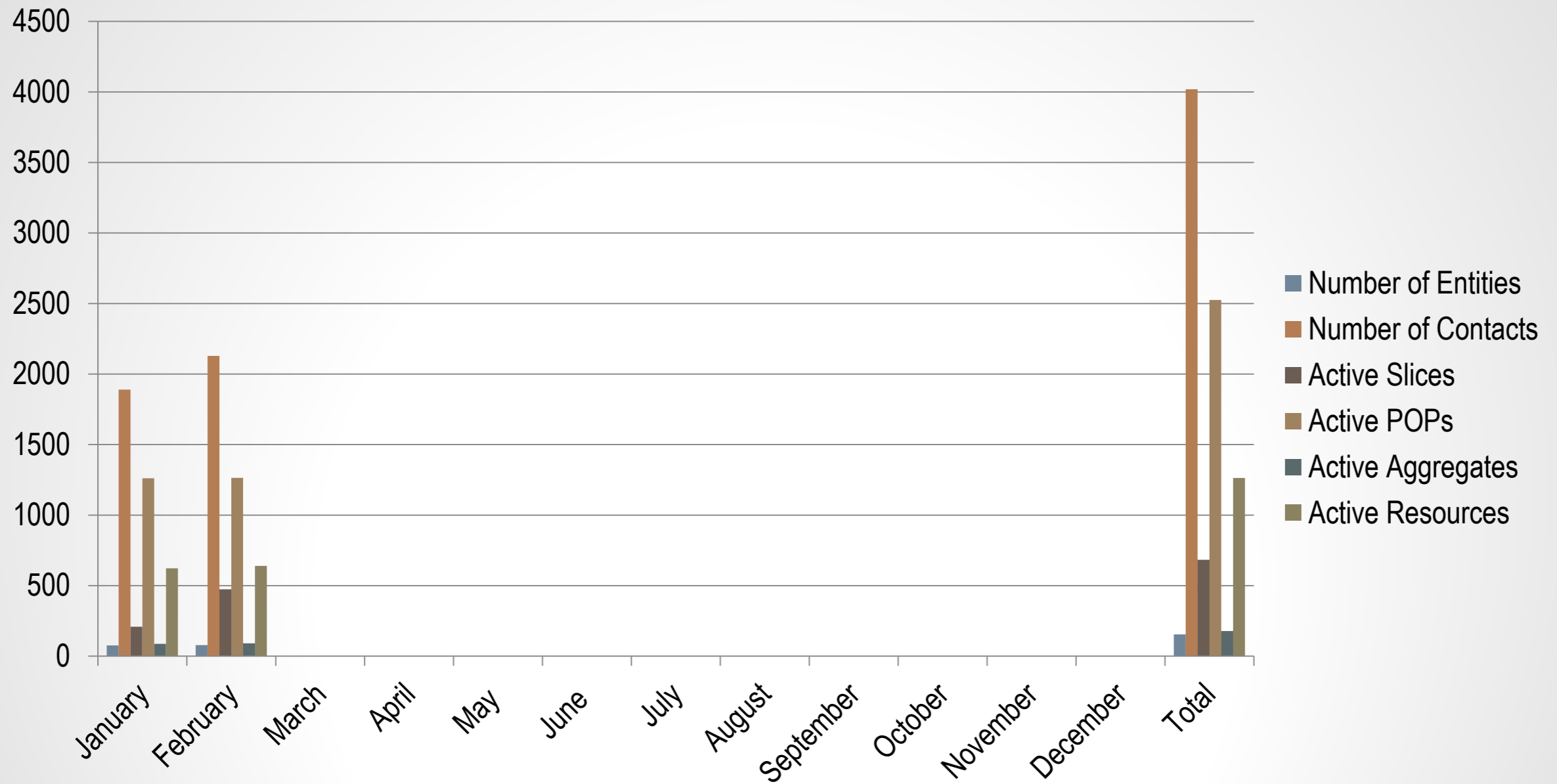
# 2013 TOTAL GMOC TICKETS, CALLS AND E-MAIL



# 2014 TOTAL GMOC TICKETS, CALLS AND E-MAIL



# 2014 GMOC-DB STATS



# FUTURE GENI OPERATIONS SUPPORT NEEDS, CHALLENGES.

- ✓ **Targeted Notifications**
- ✓ **Topology (for Emergency Stop and other needs)**
- ✓ **Circuits and Nodes in GMOC-DB**
- ✓ **Pro-active Ops monitoring/alerting**
- ✓ **Tracking outages at Regionals and other dynamic VLAN service providers (ION, AL2S)**
- ✓ **Maintenance Freeze (Scale)**

# THANK YOU QUESTIONS ?

## Contact Us

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- ✓ <http://gmoc.grnoc.iu.edu>
- ✓ 317-274-7783

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