



MANRS Steering Committee Meeting #3

9 February 2022

Kevin Meynell, Version 1.0

Attendees

| <u>Name</u> | <u>Organisation</u> | <u>Sector</u> |
|---------------------------|---------------------|--------------------|
| Melchior Aelmans | Juniper Networks | Vendor |
| Andy Clyde | Internet Society | - |
| Andrew Gallo - Vice-Chair | GWU | Network Operator |
| Hanna Kreitem | Internet Society | - |
| Flavio Luciani | NAMEX | IXP |
| Kevin Meynell - Secretary | Internet Society | - |
| Warrick Mitchell - Chair | AARNet | Network Operator |
| Arnold Nipper | DE-CIX | IXP |
| Arturo Sevrin | Google | CDN/Cloud Provider |
| Aftab Siddiqui | Internet Society | - |
| Jeff Tantsura | Microsoft | CDN/Cloud Provider |
| Tony Tauber | Comcast | Network Operator |

Apologies were received from:

| | | |
|--------------------|------------------|-----|
| Nick Hillard | INEX | IXP |
| Andrei Robachevsky | Internet Society | - |

1. Approval of Minutes

The minutes from the last meeting on 12 January 2022 were approved.

2. Actions from last meeting

- 2.1 Kevin Meynell to update the minutes of Steering Committee Meeting #1.
Done
- 2.2 MANRS Secretariat to assign staff member to each working group.
Done
- 1.3 Warrick Mitchell to follow-up on R&E Networks Programme with GNA-G.
Done - this was planned to be presented to the GNA-G at its next meeting.

3. Ambassador and Fellowship Programme 2022

Kevin updated the Steering Committee on the Ambassador and Fellowship Programme. This will start on 15 April and run until the end of the year, and will be comprised of 3 tracks: Training, Research and Policy. In 2020 and 2021, Ambassadors and Fellows carried out more than 150 events and were very important for outreach as they were able to reach a wider and more diverse audience than the MANRS staff alone.

The Steering Committee is asked to help promote the programme and reach out to potential candidates to diversify the pool of applicants. There is also a call for volunteers to help review the Ambassador applications, that could be submitted through the application form on the MANRS website and reviewed in Smartsheet. Finally, the Research Fellowships are planned to be based on certain topics, so if the Steering Committee members have any ideas for short-term activities then please share with the MANRS team <manrs@isoc.org>.

The timelines are that the Ambassador applications opened on 7 February and will stay open until 18 February. The plan is then to review these between 21 and 25 February, with the announcement of the successful candidates on 4 March.

The Fellowship applications would open on 28 February and run until 18 March. The review will be held between 14 March and 1 April, and the announcement of the successful candidates will be on 8 April.

The following Steering Committee members volunteered to review the applications: Flavio Luciani, Warrick Mitchell, Arturo Sevrin, Tony Tauber

Andrew Gallo also volunteered to review the Fellowship applications, but was unfortunately unavailable for the Ambassadors review.

Action 3.1 - Flavio Luciani, Warrick Mitchell, Arturo Sevrin and Tony Tauber to review MANRS Ambassador applications.

Action 3.2 – Andrew Gallo, Flavio Luciani, Warrick Mitchell, Arturo Sevrin and Tony Tauber to review MANRS Fellowship applications.

4. Monthly Conformance Reporting

Kevin reported that the MANRS Secretariat is planning to send out monthly conformance reports to all MANRS Participants. Andy Clyde has been re-architecting the MANRS Observatory to support this and other features, and it was hoped these reports can start being sent out in March.

The aim is to alert MANRS participants to non-conformance issues, and to encourage feedback on the CAIDA grip data. The reports will include conformance scores for each of the four actions (with separate scores for Action 4IRR and Action 4RPKI), the trends from the previous month, and the number of incidents that have been detected from the ASN(s).

Warrick asked whether anyone had any concerns with Action 4RPKI, as it intimated that network operators were undertaking Route Origin Validation when this action merely measured whether ROAs had been created for number resources. It was also unclear whether the RPKI measurement referred to a network operator's own prefixes or to its customer routes as well (the latter is actually the case). We should be clearer on which of these aspects a network operator is conformant with.

Kevin said the data going into the report was what the MANRS Observatory had available. These issues have been touched upon before and it's agreed that the data needs to be improved, but the aim with these reports is to start pushing out something to raise awareness of the ongoing issues and then improve on the process. There probably did need to be separate measurements for network operator originated issues, customer originated issues, and for ROV in future.

5. Improving data quality and conformance enhancements

Aftab gave a presentation on the work that the MANRS team had been undertaking to improve the quality of the MANRS Observatory measurements. He was happy to discuss any of this work further.

Replacing BGPstream

The issues with BGPstream were well known, and with Cisco's recent emphasis towards ThousandEyes, the future of the service was unclear. Cisco has no plans to actively develop the public interface, and the number of detected incidents is quite low.

MANRS has therefore been looking at the Global Routing Intelligence Platform (GRIP) that uses RouteViews and RIPE RIS data to detect route misoriginations. This was developed by Alberto Dainotti at CAIDA, but he has now moved to Georgia Tech along with the GRIP project which is being funded by the Internet Society.

There were currently some limitations such as the ability to measure how many peers were affected by an incident, no route leak detections, and a large number of false positives in the detected incidents. However, the MANRS team was building a system to improve the algorithm, and the incidents would be reviewed and feedback provided on a weekly basis by the MANRS staff. Steering Committee members were also invited to participate.

Administrative Bogon Prefixes

There are multiple categories of bogon including number resources unallocated by IANA, number resources reserved by the IETF (e.g. RFC1918, RFC5735, RFC6598), number resources unallocated by the RIRs, and number resources reserved by the RIRs. The latter category (RIR Reserved) is where resources are marked as bogon due to administrative issues such as non-payment, even though they are legitimately assigned to network operators.

Different RIRs have different policies with respect to administrative bogons, but ARIN is particularly aggressive in marking these and has shown willingness to change or relax their policy. However, this does generate a lot of false positives, so the proposal is remove the

RIR Reserved resources from the conformance calculations, but still show them as a new category of bogons in the incident lists.

Tony said he'd seen these cases with their customers, but providers were reluctant to drop their routes for obvious reasons. Aftab replied it was difficult problem to solve, but marking these bogons as a specific category would allow providers to distinguish them from other bogons.

Andrew asked whether the administrative bogon policies were listed on the RIR comparison charts. Aftab said that APNIC publicly documented their policies whilst ARIN did not. There had been an attempt to raise through the NRO, but RIRs were not willing to discuss this as they argued it was a legal issue.

Andrew said he would take this up with the ARIN. Aftab will prepare a report highlighting the problems.

Action 3.3 – Aftab Siddiqui to prepare a report highlighting the problems with RIR Reserved resources.

Action 3.4 – Andrew Gallo to raise issues of RIR Reserved resources with ARIN.

Single digit ASN hijacks

ASN 1 to 9 hijacks are commonly observed and are predominantly caused by Mikrotik routers using the BGP AS Path Prepend command. These incidents are benign in terms of impact and actually make the originating ASN the victim.

Approaches have been made to Mikrotik to address this issue without success, so the proposal is to remove single digit ASN attacks from per-network conformance calculations, although would these still be shown as bogons in the incident lists. They would also still count as incidents in the global conformance calculations.

In response to a comment from Arturo that networks propagating these ASNs should be penalised, Aftab clarified that it was the intention to record this as incidents against the propagating networks, but not against the innocent ASN that was being propagated.

Warrick suggested writing a blog about this to raise attention to the issue, and to hopefully encourage Mikrotik to address the problem.

Action 3.5 – Aftab Siddiqui to write blog about the single digit ASN hijack issue.

Research Activities - Internal & External

The Internet Society is funding a joint research activity with the University of Strasbourg to improve the detection of route leaks. Amreesh Phokeer (ISOC), Karen O'Donoghue (ISOC), Randy Bush (IIJ) and Cristel Pelsser (UoS), along with two post-doctoral fellows are involved with this.

The Internet Society has also sponsored the upgrade of the rpki.net repository (<https://github.com/ISOC-Research/py3-rpki-utils>) to make available utilities such as print_roa and print_manifest. Discussions are underway with APNIC and NRO to support another CA.

Finally, the MANRS team is developing an ROV-per-ASN Checker that can utilise the APNIC RPKI ROV statistics.

6. Working Groups

Kevin said the composition of the working groups was recorded in the minutes of the last meeting, but they had now set-up Slack channels and assigned liaisons from the MANRS team to support each of these groups. These liaisons were there to organise meetings, take notes, follow-up actions and provide other administrative support as necessary.

Kevin then presented the charters for each group, that were based on proposals from the various Steering Committee members.

Governance WG

Members: Melchior Aelmans, Andrew Gallo, Warrick Mitchell, Arturo Sevrin, Tony Tauber
Liaison: Kevin Meynell

Purpose:

- To consider how MANRS should operate in future.
- To consider the relationship between MANRS and Internet Society.

Proposed Deliverables:

- Proposal for self-governance and funding model for MANRS.
- Recommendation of organizational structure (e.g. Chapter 501(c)6, Chapter 501(c)3).

Conformance WG

Members: Nick Hilliard, Flavio Luciani, Arnold Nipper, Arturo Sevrin, Jeff Tantsura, Tony Tauber
Liaison: Ashlyn Wittwer

Purpose:

- To review the existing MANRS programmes and make suggestions for improvements.
- To develop and review ongoing conformance criteria.
- To improve quality of routing incident data.
- To investigate new MANRS Actions – e.g. RPKI and ROV

Proposed Deliverables:

- TBD

Capacity Building WG

Members: Andrew Gallo, Flavio Luciani, Warrick Mitchell, Arnold Nipper, Jeff Tantsura
Liaison: Kevin Chege

Purpose:

- To review the MANRS capacity building plans, and suggest changes to make it more impactful and sustainable.
- To develop Implementation Guides.
- To oversee Ambassador and Fellowship Programme.

Proposed Deliverables:

- Ambassador and Fellowship Programme 2022
- TBD

Programmes WG

Members: Melchior Aelmans, Andrew Gallo, Warrick Mitchell, Jeff Tantsura

Liaison: To be arranged

Purpose:

- To ensure continued relevance of existing MANRS programs and the specific actions of each program.
- To accept and review feedback for enhancements, additions, and retirement of actions in each program.
- To review, develop, and propose new programmes.

Proposed Deliverables:

- New programme for research and education networks
- New programme for CERT/CSIRTs?

Arturo suggested adding recommendations to existing programmes as a task for MANRS Programmes WG. Kevin clarified that the original intention of this working group was probably more to identify and develop new programmes, with enhancements to existing programmes falling into the Conformance WG portfolio, but this could be discussed further.

Action 3.6 – Working Group Liaisons to start discussion of activities and deliverables on Slack.

7. Next meetings

The next meeting will be held on Wednesday, 16 March 2022 at 15.00-16.00 UTC.

The following meeting will be held on Wednesday, 13 April 2022 at 15.00-16.00 UTC.

Megan Kruse is working on the Community Meeting and a date will be announced shortly.

Open Actions

- 3.1 Flavio Luciani, Warrick Mitchell, Arturo Sevrin and Tony Tauber to review MANRS Ambassador applications.

- 3.2 Andrew Gallo, Flavio Luciani, Warrick Mitchell, Arturo Sevrin and Tony Tauber to review MANRS Fellowship applications.
- 3.3 Aftab Siddiqui to prepare a report highlighting the problems with RIR Reserved resources.
- 3.4 Andrew Gallo to raise issues of RIR Reserved resources with ARIN.
- 3.5 Aftab Siddiqui to write blog about the single digit ASN hijack issue.
- 3.6 Working Group Liaisons to start discussion of activities and deliverables on Slack.