



MANRS Steering Committee Meeting #6

9 June 2022

Kevin Meynell, Version 1.0

Attendees

<u>Name</u>	<u>Organisation</u>	<u>Sector</u>
Melchior Aelmans	Juniper Networks	Vendor
Andrew Gallo - Vice-Chair	GWU	Network Operator
Nick Hilliard	INEX	IXP
Flavio Luciani	NAMEX	IXP
Kevin Meynell - Secretary	Internet Society	-
Warrick Mitchell - Chair	AARNet	Network Operator
Andrei Robachevsky	Internet Society	-
Arturo Sevrin	Google	CDN/Cloud Provider
Aftab Siddiqui	Internet Society	-
Jeff Tantsura	Microsoft	CDN/Cloud Provider
Tony Tauber	Comcast	Network Operator
Ashlyn Elizabeth Wittwer	Internet Society	-

Apologies were received from:

Arnold Nipper	DE-CIX	IXP
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1. Approval of Minutes

The minutes from the last meeting on 13 April 2022 were approved.

2. Actions from last meeting

- 5.1 Kevin Meynell to outline recommendations for future legal structure.
Done
- 5.2 Aftab Siddiqui to send to the Steering Committee the data on reserved versus available bogons, as well as the RADB analysis.
Ongoing
- 5.3 Kevin Meynell to send out meeting details.
Done

- 4.1 Kevin Meynell to investigate data consent for secondary contacts.
Ongoing

3. MANRS+ Proposal from CAIDA

Aftab discussed a proposal from CAIDA that was linked to their response to the FCC Nol. This had recently been discussed between David Clark and ISOC, NSRC and a few other researchers.

The idea was for MANRS participants to form a zone of trust whereby network operators would verify origin assertions and drop invalids from their customers. These announcements would then be tagged as 'Verified' and a BGP Community used to create a 'MANRS core' where announcements could be distinguished from those without a 'Verified' tag. Where a router in the MANRS core receives two announcements for the same prefix, it must prefer the 'Verified' one irrespective of path length. The idea is that customers directly connected to the zone cannot be hijacked inside the zone by invalid origin announcements.

Where a MANRS participant receives a BGP announcement from a non-participant, it must remove the 'Verified' tag if present, and must add a 'Verified' tag if the announcement only includes a customer ASN and is valid. It must also not add a 'Verified' tag if the incoming path announcement includes two or more ASNs, and must drop announcements where prefix owners have registered a ROA and the origin is not valid.

Aftab pointed out this proposal should not be confused with ISOC's MANRS+ which is a completely separate activity. MANRS was not even included in the discussions until recently.

Melchior, Andrew and Tony all observed that it was unclear how verification would actually work in practice as not all network operators trusted IRR sources the same way and RADB was particularly problematic in this respect. This would become quick complex quite quickly, lead to inadvertent tagging and therefore operational issues. There had also been other attempts to create standardised BGP communities without good results.

Warrick added that it may simply lead to MANRS participants simply tagging all routes as 'Verified' because of the problems with verification, therefore creating another problem. Aftab alternately thought it could become another tag that no-one would use or enforce.

Nick said that unfortunately this was proposing a new trust model without considering all the ramifications. He felt ASPA was more promising in this respect and would prefer to see effort put into develop this instead.

Aftab summarised that whilst the proposal had some merit, it was not underpinned by a robust trust model and would likely introduce as many problems as it attempted to solve. However, it was positive that researchers wanted to engage with the operator community and it was better to engage with them so they could understand the issues and concerns.

He therefore propose to set-up a workshop between interested MANRS participants, CAIDA and other researchers. This was agreed.

Action 6.1 – Aftab Siddiqui to set-up workshop between MANRS participants and CAIDA.

4. MANRS+ Update

Andrei provided an update on the MANRS+ developments to increase the value proposition of MANRS. This is taking a two-phased approach to develop a set of actions and conformance checks, and also aims to build a group of MANRS+ certified participants and relying parties.

The next step was to form a working group of potential participants although there is still a lack of interested relying parties compared with providers. To this end, a roundtable has been organised on 29 June 2022 (15.00-16.00 UTC) to gauge interest and determine the scope of the working group.

Andrei also asked whether any of the Steering Committee members had customers who might be interested in participating in the roundtable. In particular, relying parties in the financial sector were sought.

Tony said it was a challenge to interest sales or product divisions in routing security, but he felt an enhanced auditing programme was worth pursuing.

Andrei will send more details and the concept behind the Roundtable.

Action 6.2 – Andrei Robachevsky to send more details about the MANRS Roundtable to the Steering Committee.

5. MANRS @ Platform Internetstandaarden

Andrei reported that he and Olaf Kolkman had met with Platform Internetstandaarden in the Netherlands. This is a multi-stakeholder initiative that brings together the Dutch government and industry to promote Internet standards, and was also behind the Internet.nl platform.

One reason for the discussion was with respect to whether MANRS participation and conformance could be included in Internet.nl. The other reason was with respect to including MANRS recommendations or requirements in government agency procurements. This will involve applying for listing in the procurement requirements and is this something that the Steering Committee would be supportive of?

Melchior said that RPKI was already on the list of requirements and this was an excellent opportunity to increase adoption of the other MANRS Actions. The documentation was all in Dutch, but he was happy to help support this.

Action 6.3 – Andrei Robachevsky to follow-up with Melchior Aelmans on Platform Internetstandaarden submission.

Nick asked whether there were similar programmes in other countries or at EU level. Andrei replied this had been an opportunistic development and they hadn't researched other initiatives as yet, but he participated in the European Multi-stakeholder Platform for Standardisation that listed standards suitable for public procurement. So if they were successful with this in the Netherlands, it would likely open opportunities elsewhere in the EU.

Tony mentioned that Doug Montgomery at NIST was interested in pushing RPKI in US government procurement processes. Kevin added that MANRS had already met with NIST and discussed things along these lines.

6. MANRS R&E Programme

Warrick reported that a number of research and education networks would be meeting at the GNA Group in a couple of weeks. This will discuss how R&E networks can improve their conformance with the MANRS Actions they have difficulty implementing (e.g. creating ROAs for legacy address space), along with other ideas for promoting and improving routing security in the sector.

There are currently 78 MANRS participants in the R&E sector, but several large NRENs are not actually fully MANRS conformant. R&E networks operate in somewhat different ways to commercial network operators, and many institutions were assigned legacy address space which is marked as unallocated/bogon by the RIRs and therefore technically shouldn't be routed on the Internet. For many of these institutions it is simply not cost effective or worth the legal difficulties to sign registration agreements with RIRs to 'legitimise' these resources.

Tony asked whether the problem was with the ARIN region. Warrick said there were also a couple of issues in the RIPE region where prefixes had been split, and there had been a problem in the APNIC region where CSIRO had been given sub-assignment from an HP block that was resolved by simply handing it back.

Andrew said the problems with registration were becoming more acute as network operators were increasingly implementing routing security measures, and were therefore dropping routes that could not be validated. R&E institutions were disproportionately affected as they amongst the first to obtain number resources, often before the establishment of the RIR system.

Warrick said he would provide an update at the next Steering Committee meeting.

Action 6.4 – Warrick Mitchell to provide update on the MANRS R&E Programme at the next Steering Committee meeting.

7. Proposed MANRS Legal Entity

Kevin said that the Internet Society is committed to supporting the MANRS project until at least the end of 2023 (and possibly beyond). To this end, the MANRS leadership and ISOC's legal team had investigated different corporate structures in consideration with what the ISOC and the MANRS Community would support. They had also evaluated staffing requirements and running costs, and considered how the latter could be covered.

The MANRS project budget was USD 320k for 2022, although this did not include staff costs. Within this, the MANRS Observatory hosting and running costs were USD 30k per year, the training programme was USD 25k per year, and the Ambassadors and Fellows programme was USD 100k per year.

Staff effort was approximately 5.5 FTE, which was comprised of 5 core staff and 10 other staff contributing smaller amounts of effort. This did not include finance, legal and IT staff support.

The MANRS services and activities could be categorised as follows:

Essential Services

Application Auditing, Ongoing Conformance Checking, MANRS Observatory hosting and maintenance, Steering Committee support, Promotion & Outreach

Desirable Activities

MANRS Observatory development, MANRS Programme development, Training & Knowledge Transfer*

Value-Add Activities

Training & Knowledge Transfer*, Ambassadors & Fellows Programme, Development of different maturity levels – quality mark, certification etc...

*Training & Knowledge Transfer can be split between categories based on the scope and nature of the activity.

To provide the essential services alone, it is estimated this would cost USD 365k per year which would include 2 FTE (General Manager + Auditing Officer).

To provide the essential services and desirable activities, it is estimated this would cost a total of USD 875k per year which would include 4 FTE (General Manager, Auditing Officer, Developer, Comms/Business Development).

Additional services and activities provided on a cost recovery basis could include training and knowledge transfer, the Ambassadors and Fellows programme, and MANRS+

Purely to illustrate how this could breakdown amongst the current 820 participants in the MANRS initiative (assuming a flat rate model), just providing the essential services would require a fee of USD 445 per participant, whilst adding the desirable activities would require a fee of USD 1,067 per participant. The current value-add activities would require an additional USD 100k per year to be continued.

However, starting to charge participant fees is fraught with uncertainties as it's likely a significant number of participants would drop out of MANRS if they were charged for this, thereby forcing up the share of the costs for remaining participants. There were other question marks around how much revenue could be raised through sponsorship, grants and value-add activities, especially on an ongoing basis.

It is therefore proposed to create a Single Member Limited Liability Company (SMLLC) owned by ISOC, which is similar to how the IETF LLC was established. The MANRS Steering Committee would become the Board of Directors, and ISOC would provide a grant towards the running costs. This structure would also allow external grants and sponsorship to be pursued.

It was also proposed to hire (or transfer from ISOC) one or two staff) to run the core activities, but the LLC would still be able to utilise ISOC staff for specific tasks. This would include legal, finance and IT staff.

The advantages of this structure is that the LLC would be exempt from corporation tax, and fees and grants would be tax deductible. It would also be able to enter into contracts and hire staff, but could still share ISOC staff to increase resilience and allow specialists to be utilised.

The main disadvantage is that the MANRS participants would not actually own the company, although would have representation through the Board members. It may also have to be argued with the US IRS that MANRS is for public rather than commercial benefit, although the ISOC legal team believes this is a low risk.

An alternative structure was a Chapter 501(c)6 trade association which could be membership based. However, this could not be subsidiary entity of ISOC and would have to hire its own staff. It would also be unable to receive charitable contributions, and in particular ISOC be unable to provide ongoing funding beyond a startup grant and for specific activities that have a public benefit.

This proposal still needs to be discussed with the ISOC Executive and subsequently the Board, but the Steering Committee was asked whether it could support this in principle.

Tony asked how this proposed structure compared with the IETF LLC. Kevin replied their corporate structure was the same although the IETF existed long before the LLC was created and was significantly better established with better financial support than MANRS has at present. However, the IETF LLC had initially used some ISOC staff resources until they were able to hire their own.

Tony added the MANRS Community was not unhappy with ISOC running the MANRS initiative so asked why the overheads and financial risk of establishing a company were needed at this stage. Kevin replied that ISOC was largely structured towards working short-to-medium term initiatives that aimed to raise awareness or encourage adoption of new technologies or best practices. It did not aim to run services and as a consequence it was difficult to take a longer-term strategic approach to investing in these.

Nick asked whether the MANRS LLC would retain its charitable status if it transitioned to an independent entity. Kevin replied it would depend on what type of corporation structure was used and whether its mission was accepted as being for public rather than commercial good. A Chapter 501(c)6 trade association would have similar tax advantages, although further legal advice would be need to be sought further along in the process.

Melchior asked what the next steps were. Kevin replied that unless there were objections from the Steering Committee, he planned to discuss the proposal with ISOC's leadership within the next couple of weeks. If they were supportive, that would lead to discussions about the details and the type of financial support that might be provided, which in turn would need to be further discussed with ISOC's Board.

The Steering Committee was broadly supportive of the proposed model for the MANRS LLC, although Kevin said he would give members some more time to think about this offline. Please contact him or Aftab with any questions or concerns.

8. Next meetings

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

The following meeting will be held on Wednesday, 7 September 2022 at 15.00-16.00 UTC.

RPKI Week 2022 will be held on 4-7 July 2022 (see <https://www.manrs.org/event/rpki-week-2022/> for details)

Action 6.5 – Kevin Meynell to send out meeting details.

Open Actions

- 4.1 Kevin Meynell to investigate data consent for secondary contacts.
- 5.2 Aftab Siddiqui to send to the Steering Committee the data on reserved versus available bogons, as well as the RADB analysis.
- 6.1 Aftab Siddiqui to set-up workshop between MANRS participants and CAIDA.
- 6.2 Andrei Robachevsky to send more details about the MANRS Roundtable to the Steering Committee.
- 6.3 Andrei Robachevsky to follow-up with Melchior Aelmans on Platform Internetstandaarden submission.
- 6.4 Warrick Mitchell to provide update on the MANRS R&E Programme at the next Steering Committee meeting.
- 6.5 Kevin Meynell to send out meeting details.