MANRS

Mutually Agreed Norms for Routing Security

MANRS Steering Committee Meeting #1

8 December 2021
Kevin Meynell, Version 1.1

Attendees

Name	Organisation	Sector
Melchior Aelmans	Juniper Networks	Vendor
Andrew Gallo - Vice-Chair	GWU	Network Operator
Joe Hall	Internet Society	-
Nick Hilliard	INEX	IXP
Hanna Kreitem	Internet Society	-
Flavio Luciani	NAMEX	IXP
Kevin Meynell - Secretary	Internet Society	-
Warrick Mitchell - Chair	AARNet	Network Operator
Arnold Nipper	DE-CIX	IXP
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

1. Introducing the Steering Committee

Warrick introduced himself as the Chair, Andrew as the Vice-Chair, and congratulated everyone for being elected to the first MANRS Steering Committee. There had been significant competition with over 30 candidates standing for election, and a better than expected turnout from the MANRS Participants.

Warrick then provided a short overview of the current status of the MANRS initiative, the different programmes, and outlined the rationale for the Steering Committee.

The Internet Society has developed and supported the MANRS initiative, which has grown quickly and also gained credibility outside of the operator community. However, MANRS has become bigger than what ISOC staff can support alone, and an increasing number of decisions also need to be made that should be taken by the wider MANRS Community.

This include auditing questions as they arise; how to strengthen the existing MANRS Actions, development of ongoing MANRS conformance criteria; how to handle participants failing to meet the necessary criteria for MANRS conformance; and the development of new programmes.

The Steering Committee's role is outlined in the MANRS Community Charter (https://www.manrs.org/about/governance/community-charter/), but can be summarized as

- Coordinating the MANRS activities;

- Making recommendations to the MANRS Community on the creation, alteration and removal of categories of participation and corresponding actions;

- Reviewing and making recommendations to the MANRS Community about the MANRS Actions and minimum conformance criteria;

- Supervising the auditing process for new applicants, including making decisions on applications where conformance with the established criteria is marginal or unclear, where unanticipated circumstances occur that are not covered by the documented auditing process, and handling appeals from applicants that have been refused approval;

- Making recommendations to the MANRS Community on the suspension and termination of organisations from MANRS participation that fail to meet the minimum conformance criteria;

- Supervising the incident handling process;

- and, appointing the MANRS Advisors.

A mailing list had already been set-up for the MANRS Steering Committee <manrs-steering-committee@elists.manrs.org> and the members were asked whether a Slack channel would also be useful. It was agreed this should be set-up.

ACTION 1.1 – MANRS Secretariat to set-up a Slack channel for the MANRS Steering Committee.

2. MANRS Strengths and Weaknesses

Kevin reported there was growing awareness of the importance of routing security within and beyond operator community, and that MANRS participation had been doubling each year. There had also been increased community involvement which had seen the development of the MANRS Community Charter, the establishment of the MANRS Steering Committee, the development of an enhanced action set for the CDN/Cloud Programme, and the introduction of the Vendors Programme. In addition, there been a lot of interest in pushing RPKI and ROV further.

However, there were some issues with ongoing non-conformance amongst existing MANRS participants that risked reputational damage to the MANRS initiative.

687 ASNs were MANRS participants as of December 2021, but 85 were non-conformant with Action 1: Route Filtering; 3 were non-conformant with Action 3: Coordination; 126 were non-conformant with Action 4: Global Validation IRR; and 407 were non-conformant with Action 4: Global Validation RPKI. 49 were non-conformant with at least 2 actions, and most concerningly 9 had multiple routing incidents over multiple months.

A major weakness of MANRS is that applicants are generally only required to be conformant upon application. Ongoing conformance was introduced for Actions 3 & 4 during 2021, but there is currently no regular checking, mostly because automated reporting is still being developed.

Some noticeable route incidents have originated from MANRS participants that prompted the introduction of a rapid response requirement, but the system is primarily reactive and reliant on chance to uncover problems. Furthermore, no actions have been taken against persistently non-conformant MANRS participant, although is partly because of quality of route incident measurements.

The aim is to double MANRS participation each year, and whilst current approval rates are close to this target, the number of ASNs continues to grow faster. It is felt that simply targeting in network operators, IXPs and CDN/Cloud providers is only resulting in consistent rather than faster growth rates, and that enterprises and other sectors need to be targeted. A further question to ask is whether increased adherence to the MANRS Actions is actually having a positive impact on routing incidents?

3. Proposed Activities in 2022

Kevin discussed some proposed activities for the coming year.

The Internet Society was supporting MANRS as one of its projects and therefore needed to develop a plan as to what should be funded and what staff should be allocated. The proposed activities were based on twha he Internet Society feels needs to be worked on as MANRS moves forward, but these activities should not be considered exclusive (or inclusive). Advice was also needed from the MANRS Community as to how best to develop these things, what things would be supported, and where the community would prefer efforts to be directed.

Ongoing Conformance and strengthening MANRS programmes

The issues to address with respect to ongoing conformance were identified as follows:

- Improving route incident measurement quality
- How to address administrative bogons
- Setting parameters for routing incident conformance: number, duration & impact
- Improving anti-spoofing measurements
- What is an acceptable level of conformance for sign-up and on an ongoing basis?
- Regular conformance checks and reporting, including publishing readiness scores
- Should RPKI become a mandatory action and over what timeframe?
- Implementing new actions – e.g. ROV?

It was anticipated these items would requires significant input and feedback from the MANRS Community, in particular with respect to what would be supported.

MANRS Observatory Developments

The Internet Society had already been working on significant improvements to the Observatory during 2021, had hired a developer (Andy Clyde) to work on this, and would be

hiring another UI/UX specialist in 2022. The aim was for the new platform to go live in January 2022, which would consolidate different systems and databases into a single platform. This would allow for a semi-automated application process, and would allow automated checking and reporting to be implemented.

The Internet Society would also be looking to develop alternative data sources, to reduce reliance on BGPstream and enhance data quality.

There was not a significant amount of community involvement needed for this activity, but feedback on the quality of the new data sources would be helpful.

Engaging with new communities

As previously mentioned, it was anticipated that sectors beyond the traditional network operator, IXP and CDN/Cloud provider community needed to be targeted. Some suggestions were as follows:

- CERT/CSIRT Community
- Financial enterprise sector
- Governments (including national critical infrastructure agencies, developing standards and best practices, and encouraging departments and agencies to adopt routing security practices)

There had already been significant engagement with the CERT/CSIRT Community during 2020 and 2021, but Steering Committee member were asked whether they had good contacts with other sectors.

MANRS Self-Governance

The Internet Society is committed to supporting the MANRS project until (at least) the end of 2023, but its leadership had asked for a pathway towards self-governing entity. For example, whether MANRS becomes an Internet Society subsidiary entity (like the IETF) with its own board etc.., or whether it should become an independent organisation. In any of these cases, what would be the most appropriate corporate structure?

This should include discussion on what are the core functions and nice-to-haves, as well as any added value (possibly additional cost) services. Funding models such an Internet Society grant, industry sponsored, participant fees, valued add services, or a mix of all these things should also be considered.

As such, this was the only activity where decisions needed to be made by the end of 2022.

Kevin outlined what the MANRS Secretariat considered to be essential, desirable and value-added activities:

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

Desirable Activities - MANRS Observatory development, and MANRS Programme development

Valued-Added Activities - Training & Knowledge Transfer, Ambassadors & Fellows Programme, and development of different maturity levels, including quality mark?

4. How to split up the work?

Kevin said it was recognised there is quite a lot of work proposed and the amount of time available during Steering Committee meetings was limited, so the MANRS Secretariat is proposing to divide this up into smaller working groups compromised of Steering Committee members and Secretariat staff. The Steering Committee can also appoint MANRS Advisors to provide specialist advice and/or as liaisons to other relevant groups

The following working groups were therefore proposed:

- *MANRS Governance* – how should MANRS transition from project to industry-led entity?

- *Strengthening MANRS* – ongoing conformance measures, new actions (e.g. ROV), new programmes

- *Ambassador & Fellows* – selecting Ambassadors & Fellows

- *Training & Documentation* – developing and updating the training courses and Implementation Guides

Nick asked how much involvement Steering Committee members were expected to have in the work, and what sort of time commitments would be needed. Kevin replied that it was expected that the MANRS Secretariat would provide much of the effort, but they needed to understand whether particular things would have the support of the wider MANRS community. He felt the MANRS Governance and Ambassador & Fellows activities would require little time commitment in practice, whilst Training and Documentation could be scaled to whatever time could be committed; recognising that some of the Steering Committee members had already been heavily involved in this work previously.

The Strengthening MANRS activity could potentially be quite a large activity though, as this would benefit from ideas and proposals, and would certainly require ongoing consultation with the Steering Committee members. In fact, it may be necessary to further divide this work into smaller activities, such as ongoing conformance issues,and new actions or programmes.

It was agreed this should be discussed further at the next meeting.

5. Proposed Programme for Research & Education Networks

Warrick presented a proposal for a new MANRS programme targeted at Research and Education Networks. This had been formulated by the Global Network Advancement Group (GNA-G), an international community of research and education networking organisations.

The aim was to encourage all R&E networks to reach MANRS conformance by developing techniques and tools, and through promotion and capacity building. This was distinct from the

Network Operators programme as RENs and their customers have a lot of legacy address space that needs to be registered before ROAs can be created, and the implementation of ROV and BCP38 is more practical in a mutual interest and non-commercial sector.

The Steering Committee were happy to support the proposal and Warrick said that he would take this back to the GNA-G as to the next steps.

Action 1.3 – Warrick Mitchell to follow-up on R&E Networks Programme with GNA-G.

6. Next meetings

Kevin proposed to hold the next meeting on Wednesday, 12 January 2022 at 15.00-16.00 UTC. This was agreed.

Action 1.2 – MANRS Secretariat to send out calendar invitation for next Steering Committee meeting.

Subsequent meetings are provisionally scheduled for Wednesday, 9 February 2022, and Wednesday, 16 March 2022. The frequency after can be discussed according to the work programme, although the MANRS Charter requires the Steering Committee to hold at least one meeting per quarter.

MANRS Community Meetings are also tentatively planned for March, July and September 2022.

Open Actions

1.1 MANRS Secretariat to set-up a Slack channel for the MANRS Steering Committee.

1.2 MANRS Secretariat to send out calendar invitation for next Steering Committee meeting.

1.3 Warrick Mitchell to follow-up on R&E Networks Programme with GNA-G.