Background

• DOTS needs an Information and Data Model
  – So far, proposals have mostly been intertwined with DOTS protocol proposals

• Volunteered to produce Information and Data Model draft in IETF 96 meeting (Berlin)

• -00 presented at the DOTS Interim meeting in September
  – Focus was on overall document structure and high-level content based on requirements, architecture and use-cases
  – Mostly a structured inventory of the more detailed model work that needed to be done; details missing
Start providing more details with a focus on the Information Model aspects

- Protocol and transport agnostic, but need to satisfy requirements, architecture, and use cases
- Describes a logical API to put Information Elements in context and ensure we define the right ones
  - May have veered into protocol aspects in a few places
- Defines the various Information Elements
  - Note: Mostly inventory in -01
Document Outline

• Major Sections
  – Introduction, etc.
  – Information Model
  – Data Model
  – IANA, Security Considerations, etc.

• Data Model Section is currently empty
  – And maybe it should stay that way?
  – Focus on Information model only here, and leave specific data model to whichever protocol we ultimately chose?
Information Model Outline

• 3.1 General
  – Logical description of key concepts the information model needs to support
    • Request/Response and Notifications
    • Modularity with mandatory, optional and extensions
    • DOTS Agent Identity
    • Server Discovery, Versioning and message correlation

• 3.2 Signal Channel Messages
  – Logical API that defines different Request/Response and Notifications for the signal channel with:
    • Information Elements (parameters)
    • Modularity considerations (mandatory, optional, extension)
Information Model Outline

• 3.3 Data Channel Messages
  – Logical API that defines different Request/Response for the data channel with:
    • Information Elements (parameters)
    • Modularity considerations (mandatory, optional, extension)

• 3.4 Information Elements
  – The actual Information Elements for the information model
    • Mostly inventory in -01
Open Issues

• Document is work in progress with more details needed in various sections
• A number of more detailed issues are noted in the document and require further work as well
• A few of these are worth highlighting here
Issue 1 – Mandatory, Optional and Extensions

• Modularity is key; we can’t require everybody to do everything
  – Different capabilities, attack target types, etc.

• What do we consider to be
  – mandatory baseline functionality?
  – optional baseline functionality?
  – extensions?

• Proposal
  – Requirements, use cases and information/data model documents all need to identify mandatory, optional, extension
    • Requirements should be the driver
  – Each of the above documents should focus on mandatory and optional; extensions can be provided separately
    • Scope and phase the work to ensure timely progress
Issue 2: DOTS Authentication, Authorization, Agent-IDs and Domains

• What is the DOTS Identity Model?
• Mutual authentication is a DOTS requirement
  – Assume we will run on top of (D)TLS
• We have the notion of DOTS domains with mutual authentication/authorization between them
• Do we need a DOTS Agent-ID at the DOTS level?
  – DOTS Agent unique identifier with domain structure
    • Helps simplify authorization and operations
    • Helps DOTS Gateway scenarios (?) – or are we effectively reintroducing DOTS relays?
  – What does it look like?
  – Is it authenticated at the DOTS level?
    • Alternative is to rely on lower-level security, i.e. (D)TLS

• Proposal
  – We should have a DOTS Agent-ID with domain-structure
  – Authentication details TBD
Other Issues

• To Anycast and/or Redirect
  – That is the question…

• Is redirect of signal channel and data channel independent?

• Various details for specific Information Elements
Next Steps

• Is document and overall approach on the right track?

• Do people want to see this work continue?

• Plan on adding more content, resolve open issues etc.
  – Comments and input from the WG appreciated