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IETF 111 DTN WG Asynchronous Management Architecture

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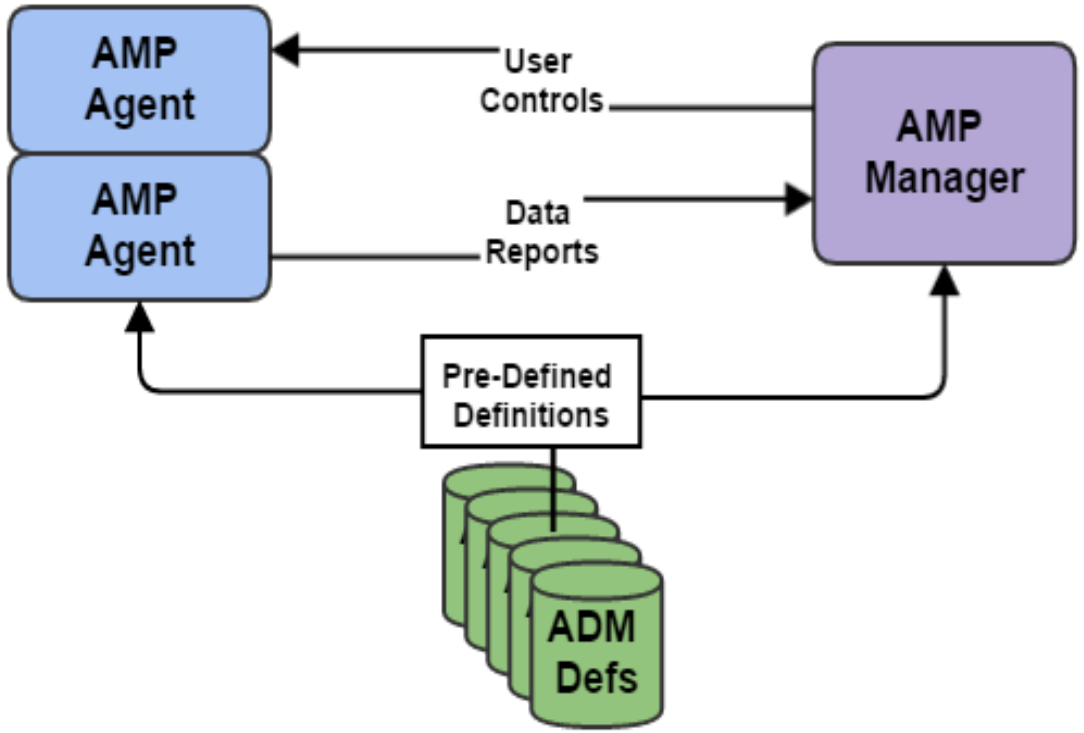
Agenda

- What is AMA (and ADM, AMP)
- Status within IETF and feedback
- Next Steps
- Discussion

What is the Architecture

From *draft-ietf-dtn-ama*

- Agents
  - Run on Managed Devices
  - Configure/Report on devices
  - Heavy autonomy and parameterized control
- Manager(s)
  - Collect/Fuse data from Agents
  - Configure Agent behavior
  - Open-loop control
- ADMs
  - Well-named Data and Controls
  - Merge of NM data representations
    - Telemetry and Command Workbooks
    - Management Information Bases (from SNMP)
    - YANG modules (from NETCONF)



AMA Status in IETF

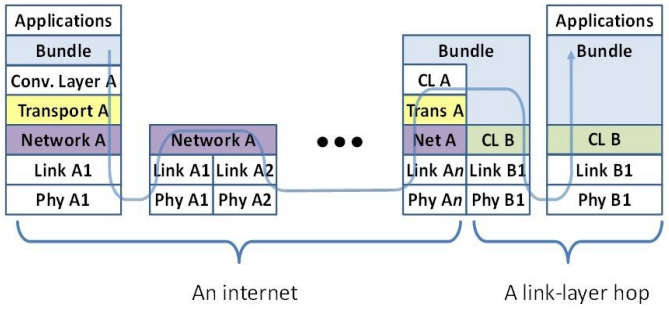
https://datatracker.ietf.org/doc/draft-ietf-dtn-ama/

- Went through DTN WG last call, April 2021
- Received minor comments – asking to extend definition of AMA beyond “network management”
  - *A valid comment – AMA should transcend many use cases, many applications*
  - *Support management of networks, systems, services, applications*
  - *Controls and reports, transmitted over any media, over any network, including carrier Pidgeon*
- AMA should be generic, ADMs define applications, AMP defines functionality

- ***Can ADMs support all this flexibility?***
- ***Does the AMA itself need to be modified to support these new use cases? (including consensus and federated management)***

Motivation for Asynchronous Network Management

BP bridges Internet and Space Transport



DTN Transport

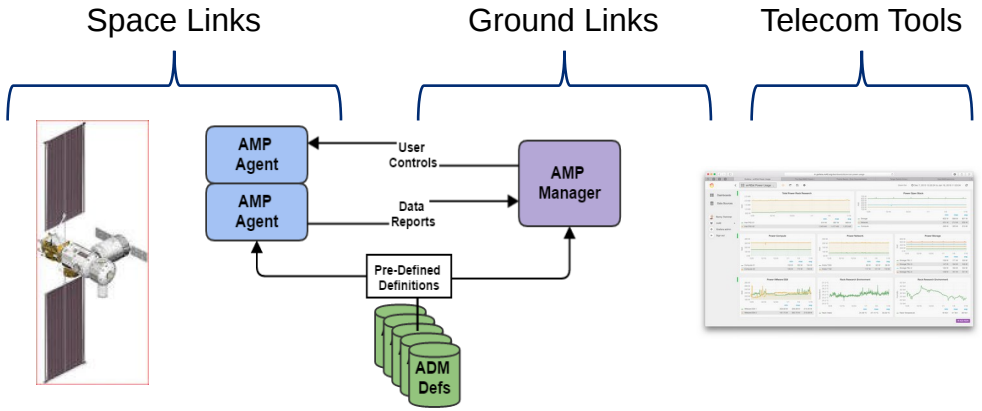
- Delayed/disrupted links
- Different link types
- Different naming addressing
- Resource-constrained nodes

vs

Internet Transport

- Available Links
- Lots of Data Volume
- Fixed Addressing
- High Processing Ability

AMP bridges Internet and Space Management



DTN Mgmt

- "Push" Information
- Automation/Autonomics
- Controls and Data
- Constrained nodes

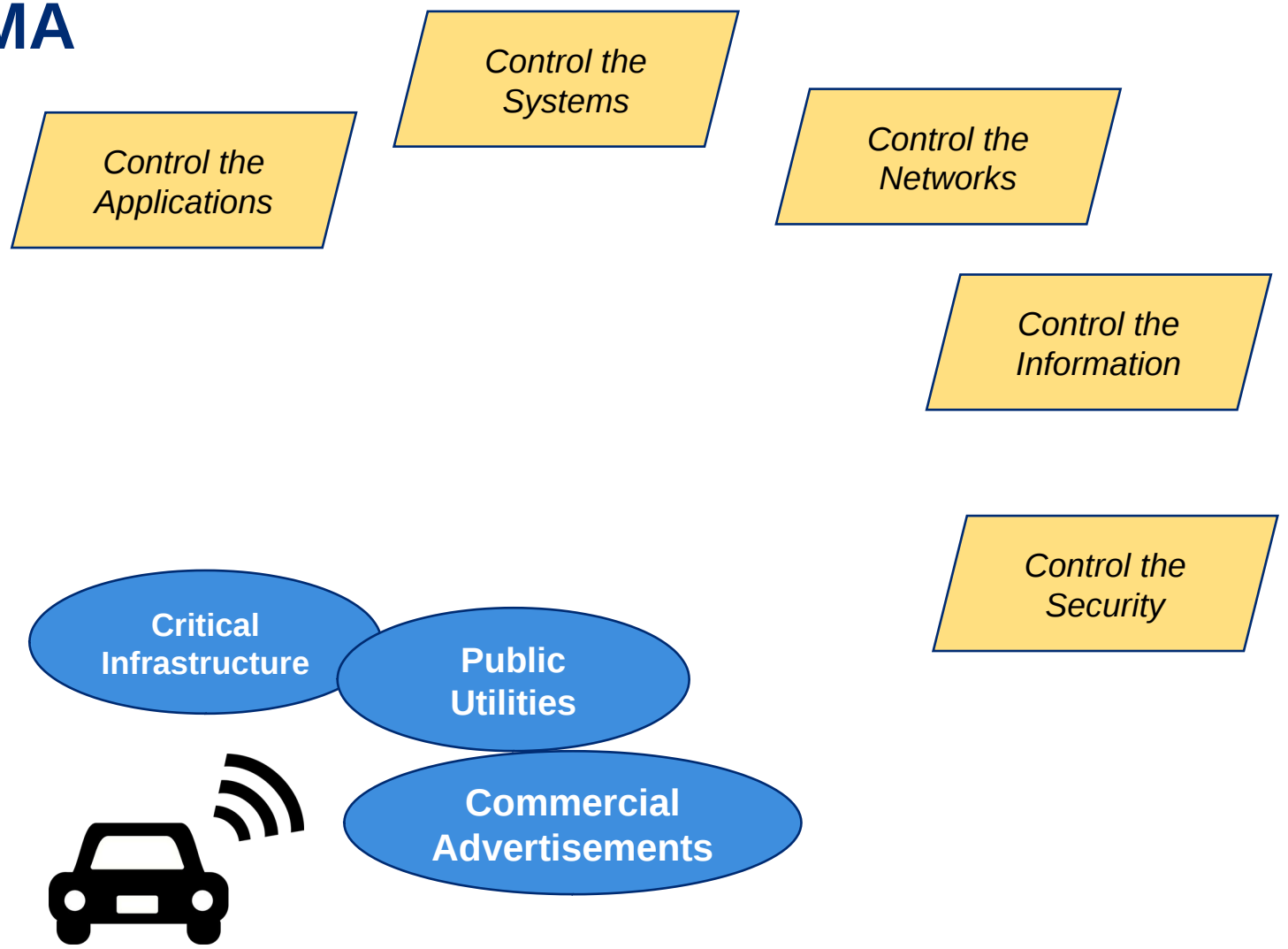
vs

Internet Mgmt

- "Pull" Information
- No Autonomy
- Just Data Monitoring
- Lots of bandwidth
- Lots of processing

Additional use cases for AMA

- Smart city connectivity could feel a lot like DTN
- Use the AMA to manage IoT devices, critical infrastructure
- Controls over short range comms delivered by drive-by units
- Reports collected at the same time



AMA Next Steps - Publish a new/final version of AMA

- **<u>Open questions coming out of WG last call</u>**
  - Clarify:
    - Bounds of management beyond the network
    - Scope and function of agent autonomy
    - Actor to Actor (manager to manager/agent to agent) relationships
    - Requirement for agents to be managed or not
    - Tight integration of standardized data models (public and private)

- Comments? Questions?

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