

Diameter Bulk Signaling

draft-liebsch-dime-diameter-bulksig-00.txt

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Outline

- Motivation to have this document
- Proposed structure for a joint draft
- Some details on proposed content
- Next steps

Motivation & Background (1/2)

- SDOs utilize Diameter on various reference points in their architecture
 - 3GPP
 - ETSI 's TISPAN
- Need for bulk signaling identified and discussed
 - Mass handling, e.g. re-registration, state restoration
- Discussion about draft-liebsch-dime-diameter-gps during IETF79 and IETF80
 - Proposes dedicated Diameter Session for bulk signaling
 - Discusses grouping of Attribute-Values for bulk transmission

Motivation & Background (2/2)

- Valuable feedback received
 - More use cases and enlarged scope
 - GP Session has value, but represents a new application
 - Platform for specification: DIME or alternative group
 - Good idea, but overloading is 3GPP habit
 - New messages as alternative
 - GP Session has clear rules, but other SDOs (TISPAN) just ignore the Session ID
 - Enlarge the scope of the idea to address also signaling without Session ID
 - Focus on grouping for bulk signaling
- Conclusion at IETF80: Interest & space for this work in the DIME group
- Start with Use Cases & Practices

First version of the draft..

- Is a proactive submission to initiate new work
- Reflects the discussion with the WG
- Proposes initial structure and content
- Solicit input and contributions towards a joint WG document
- Target: Specification of bulk signaling as solution for SDOs

Proposed Document Structure

- Introduction
- Conventions and Terminology

- Analysis of Use Cases
- Practices for Bulk Signaling & Classification
- Detailing selected Practice
- Approaches to group Attribute-Value-Pairs for bulk transfer of multi-user context
- Security Considerations

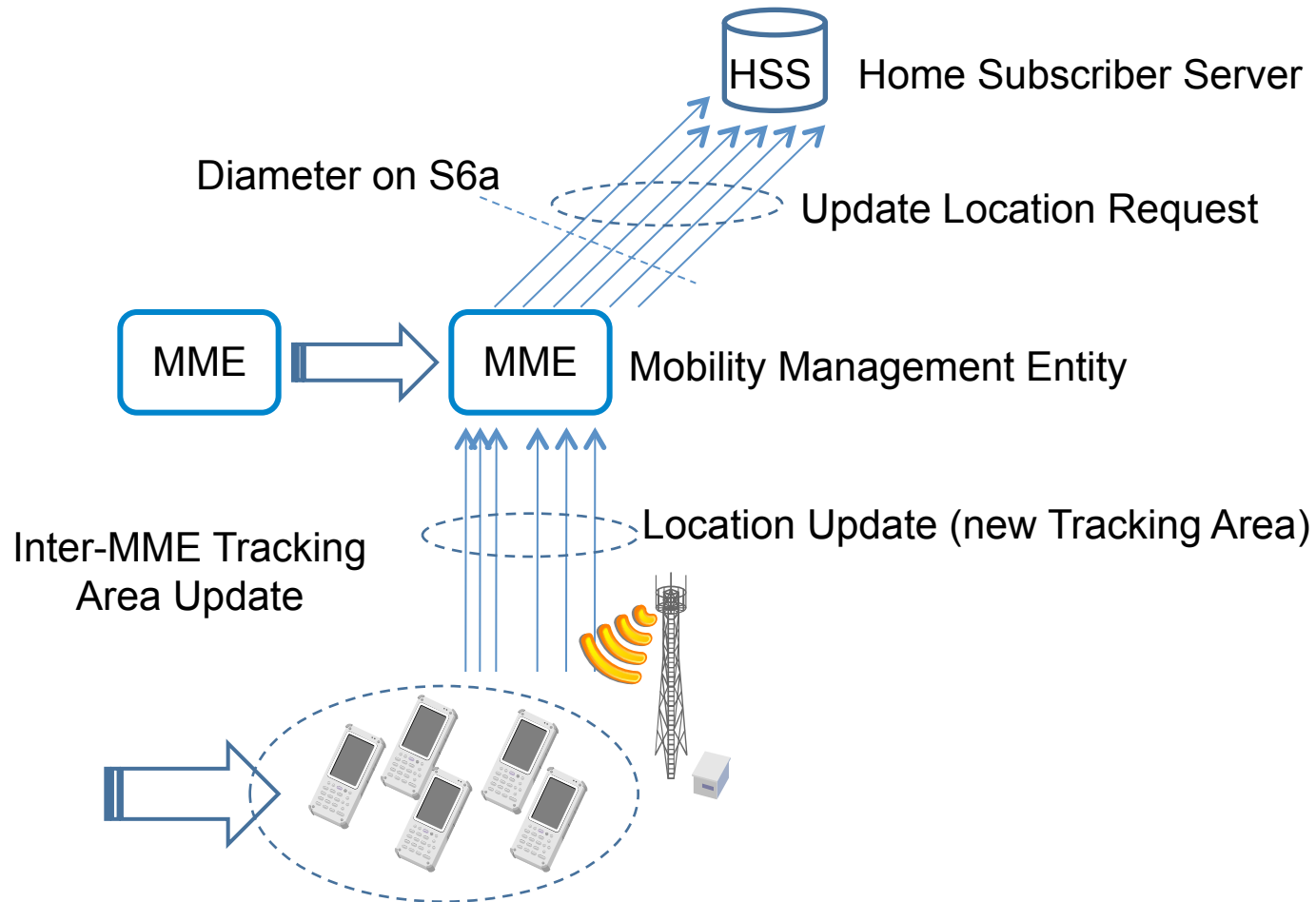
- IANA considerations

Analysis of Use Cases

- General: Reduce signaling volume
 - Signal bulk information to reduce number of single protocol handshakes
- State restoration
 - After node failure/restart [3GPP TS 29.816]
 - Client re-registration after node failure addressed in [TD S2-113795]
- Group handling
 - Policy enforcement [ETSI TS 183 060]
 - Policy requests

Analysis of Use Cases

Example from 3GPP, Concern about signaling volume



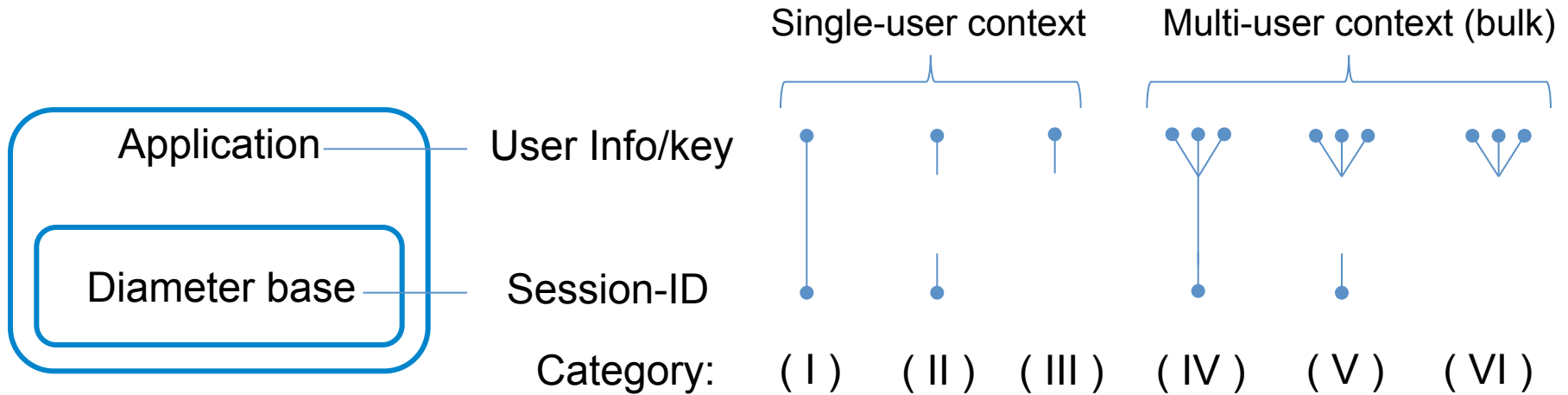
Practices

- Overloading the Session ID
 - Use single user 's Session ID, signal multi-user context
- Disregarding the Session ID
 - Application user key/Identifier not linked to Session ID
 - No Session-ID maintained for subscribers
 - Auth-Session-State AVP has value NO_STATE_MAINTAINED
 - New application, Diameter Session-ID 'terminated implicitly '
 - Used messages mandate Session-ID AVP, but it has no meaning
 - Approach suitable for bulk signaling

Practices

- Use of messages, which do not use Session IDs
 - Limited existing messages
 - New messages
- Dedicated Session ID
 - Dedicated for bulk operations in addition to per-user Session IDs

Practices / Categories



signaled Application user keys

V. Overloading of Session ID, which is independent of multiple signaled

Application user keys

VI. No Session ID used, multiple Application user keys signaled

V. Overloading of Session ID, which is independent of multiple signaled

Application user keys

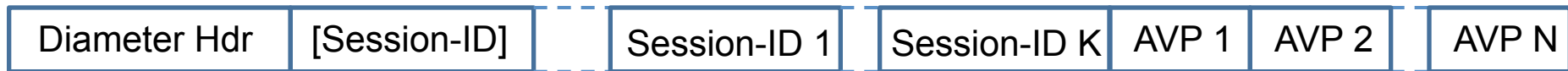
VI. No Session ID used, multiple Application user keys signaled

(in the order of efficiency)

- **List of Session-IDs** identifies a group of users, list of



- **List of Session-IDs** identifies a group of users, list of attributes/values applies to all users of the group



- **List of Session-IDs** identifies multiple users, each Session-ID has an **individual list of AVPs** associated



References

- **ETSI TS 183 060**

, Resources and Admission Control Subsystem (RACS), Re-interface based on the Diameter protocol
• **3GPP TS 29.272**, Mobility Management Entity (MME) and

SGSN related interfaces based on the Diameter protocol
• **3GPP TS 29.816**, Study on PCRF Failure and Restoration

TD S2-113795

, Contribution to 3GPP TSG SA2 WG2 meeting #86, 11-15 July 2011, Core Network Overload Solution Study

- Scope: Identify and document scenarios, that may result in signaling

Next

- Target mature version before next IETF
- Adoption of this work item and document