**3GPP TSG-SA3 Meeting #115 *S3-24XXXX***

**Athens, 26 February – 1 March 2024**

**Source: Google, CableLabs, John Hopkins University APL, Cisco Systems**

**Title: Introduction for TR 33.776**

**Document for: Approval**

**Agenda Item: 5.4**

# 1 Decision/action requested

***Approve this contribution to add text in the Introduction for TR 33.776***

# 2 References

[1] IETF RFC 4210: “Internet X.509 Public Key Infrastructure Certificate Management Protocol (CMP)”

[2] TR 33.876 v18.0.1 Study on automated certificate management in Service-Based Architecture (SBA)

[3] IETF RFC 8555: “Automatic Certificate Management Environment (ACME)”

# 3 Rationale

The Study of ACME for Automated Certificate Management in SBA has been approved in SA3#102 in SP-231785. The contribution adds text in the Introduction clause for ACME for Automated Certificate Management in SBA TR.

# 4 Detailed proposal

\*\*\* BEGINNING OF CHANGES (all text new) \*\*\*

# Introduction

5G Service Based Architecture (SBA) is secured using X.509 certificates across the large number of SBA components and corresponding Network Functions (NFs). Virtualization and increased modularity of NFs has resulted in multi-vendor environments becoming more prevalent. It is now common for NFs to come from different vendors and for the cloud native environment in which they run to come from yet another vendor and for all of these to be independent of the Certificate Authority that is authoritative for the certificates used to secure communications. In such deployments, it is impractical to manage certificates manually.

3GPP defined the use of Certificate Management Protocol v2 (CMPv2) [1] for automated certificate management for SBA [2]. Automated Certificate Management Environment (ACME) [3] was defined specifically for automated certificate management and is particularly well suited for some scenarios. Infrastructure deployment such as NFs deployed on cloud native platforms (e.g., Kubernetes) often have built-in support for ACME, so it is a natural fit. Another important benefit of ACME is automated validation of authority to represent an identifier (i.e., to be authoritative for the resource for which the certificate is issued). This is particularly helpful for multi-vendor environments and in cross-carrier scenarios.

Additional work is required to determine the feasibility and confirm the benefits of the use of ACME in 5G SBA.

\*\*\* END OF CHANGES \*\*\*