3GPP TSG SA WG 4 Meeting 115-e TDoc S4-211038r1

Electronic, 18–27 August 2021

**Title: LS on UE data collection and reporting**

**Response to: LS S2-2104864 on UE data collection from SA2**

**Release: Rel-17**

**Work Item: EVEX**

**Source:** **SA4#115-e**

**To:** **3GPP SA2**

**Cc: 3GPP CT3**

**Contact person: Richard Bradbury**

**richard dot bradbury at bbc dot co dot uk**

**Send any reply LS to: 3GPP Liaisons Coordinator,** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

**Attachments:** S4-211xxx [Draft TS 26.531 v0.1.0].

# 1 Overall description

*SA4 is pleased to provide the following update on the start of the EVEX work item, and requests confirmation of certain details listed in section 2 below.*

In relation to the Release 17 normative work item 920008 ("5GMS AF Event Exposure") approved at the recent SA#91-e meeting, SA4 would like to inform you that it has commenced the drafting of a new technical specification, designated TS 26.531, to define a generic reference architecture for data collection and reporting. An early draft of this document agreed at the SA4#115-e meeting is attached for your information, review and feedback. This is intended to address SA2 requirements for direct and indirect reporting of UE data to the NWDAF for the purpose of data analytics, as outlined by the procedures documented by SA2 in TS 23.288. In addition, draft TS 26.531 expands this scope to accommodate some SA4-specific requirements for exposure of domain-specific events to entities outside the trusted domain, such as exposing 5G Media Streaming client access logs held by the 5GMS AS to the 5GMS Application Provider.

As explained in SA4's previous liaison to SA2 [S4-210961], the aim is to define a generic abstract architecture for data collection and reporting that can be instantiated by the 5G Media Streaming architecture as well as by other future application-oriented domains. To that end, the reference architecture found in draft TS 26.531 defines three key functions:

1. A new abstract Application Function called the **Data Collection AF** that is intended to be instantiated in domain-specific Application Functions, for example inside the 5GMS AF. This new AF exposes a new Data Collection service (with the proposed designation Ndcaf) to other network functions firstly for the purpose of provisioning data collection and reporting activities, and secondly for the purpose of configuring data collection clients and subsequently receiving data reports from them. A third purpose – the exposure of events to subscribers such as the NWDAF – is satisfied by the Data Collection AF providing the Naf\_EventExposure service defined in TS 23.501, TS 23.502 and TS 23.288, and specified in TS 29.517.

- It is envisaged that provisioning the Data Collection AF could be initiated by actors both within the trusted domain and without.

- Similarly, reporting from clients deployed both inside and outside the trusted domain is envisaged, in order to satisfy the SA2 requirement for both direct and indirect reporting of UE client data. The latter introduces a requirement to expose the proposed Ndcaf service via the NEF.

- It is envisaged that data collected can be processed by the Data Collection AF and exposed to event subscribers inside the trusted domain by means of the existing Naf\_EventExposure service, and outside the trusted domain by means the equivalent Nnef\_EventExposure service provided via the NEF.

2. A new abstract UE function called the **Direct Data Collection Client** is intended to be instantiated in domain-specific client functions, for example inside the 5GMS Media Session Handler. This acts as a reporting client of the Data Collection AF, invoking the Ndcaf service to obtain its configuration and subsequently to report data.

3. A new abstract function called the **Indirect Data Collection Client** is intended to be instantiated in the Application Service Provider server. This acts as a reporting client of the Data Collection AF, invoking the Ndcaf service to obtain its configuration and subsequently to report data. (When the Application Service Provider server is deployed outside the trusted domain, an equivalent service is invoked via the NEF.)

A set of four envisaged deployment scenarios is provided in Annex A of the attached draft TS 26.531. These illustrate permutations in which the various system actors are deployed either inside or outside the trusted domain.

The instantiation of the data collection and reporting architecture for 5G Media Streaming is also part of the scope of the EVEX work item and will be documented by SA4 at a later point in Release 17 as a set of changes to the existing TS 26.501 and TS 26.512 documents. Other application domains (e.g. 5MBS User Services) may introduce additional instantiations.

Note that because the 5GMS AF may be deployed outside the trusted domain, it therefore follows that the Data Collection AF may also be instantiated outside the trusted domain. This scenario is illustrated by Collaboration D in Annex A of the draft technical specification attached. Functions inside the trusted domain are in this case accessed by the Data Collection AF via the NEF.

# 2 Actions

**To SA2**

**ACTION:** SA4 asks SA2 to confirm the following at the soonest available opportunity:

1. That the reference architecture outlined in the attached draft TS 26.531 satisfies the requirements of TS 23.288.

2. That SA2 is content for SA4 to proceed with stage 2 definition of the proposed Ndcaf service.

3. That it is acceptable to expose certain events to system actors other than the NWDAF via the event exposure service, including actors deployed outside the trusted domain.

4. That it is acceptable for SA4 to define additional event types (e.g. a 5GMS media access event) to be exposed by the Data Collection AF to the NWDAF and/or other interested subscribers using the event exposure service for the purpose of data analytics.

5. That it is acceptable for a Data Collection AF instance deployed inside the trusted domain to expose its Ndcaf service to system actors deployed outside the trusted domain via the NEF (Collaborations B and C in Annex A of the attached draft TS 23.531), and that SA2 will be able to make the necessary additions to TS 23.501, TS 23.502 and TS 23.288 in the Release 17 timeframe to accommodate such deployments.

6. That it is acceptable for a Data Collection AF instance deployed inside the trusted domain to expose events to actors deployed outside the trusted domain via the NEF, using the Nnef\_EventExposure service.

7. That it is acceptable for a Data Collection AF instance to be deployed outside the trusted domain (Collaboration D in Annex A of the attached draft TS 23.531) and to register itself with the NRF via the NEF across the trust boundary.

NOTE: Table 5.2.7.1-1 of TS 26.502 lists the NEF as an example consumer of the Nnrf\_NFManagement service. However, table 5.2.6 of TS 26.502 does not list this service as being exposed by the NEF. SA4 observes that this gap already adversely impacts one deployment scenario specified in clause 4.1 of TS 26.501 (Release 16) in which the 5GMS AF is deployed outside the trusted domain.

8. That it is acceptable for an NWDAF instance deployed inside the trusted domain to invoke the Nnef\_EventExposure APIs on an externally deployed Data Collection AF instance via the NEF across the trust boundary.

# 3 Dates of next TSG SA WG 4 meetings

SA4#116-e 10th–19th November 2021 E-meeting

SA4#117 14th–18th February 2022 Sophia Antipolis, France