3GPP TSG SA WG4 Meeting #123 draft TDoc S4-231093

Electronic, 17th–21st April 2023

**Title: Reply LS on the reuse of EVEX as specified in TS 26.531**

**Response to: S4-230963 | S6-232001**

**Release: Rel-18**

**Work Item:** **ADAES**

**Source:** **3GPP SA4**

**To:** **3GPP SA6**

**Cc: 3GPP SA2, 3GPP CT3**

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**Attachments:** None

# 1 Overall description

SA4 thanks SA6 for its continued interest in the possible reuse of the SA4-defined EVEX framework in the context of its current work items Application Data Analytics Enablement Services (ADAES) and application service management in eSEAL2. SA4 also thanks SA6 for explaining its requirements in more detail and is pleased to provide the following information which it hopes is useful.

## 1.1 Answers to specific questions

SA4 is pleased to provide clarifications on the following specific questions:

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| a) What exactly is a ‘session' in context of EVEX? Is it a session-oriented transport channel, or just a configuration context or something else? |

A data reporting session is most closely aligned to the concept of an application layer configuration context. It does not comprise a long-lived session-oriented transport channel.

As an optimisation, an implementation of the Direct Data Collection Client may choose to keep an application layer connection open to the Data Collection AF using HTTP session keep-alive, for example in situations where it is configured to send UE data reports frequently, but it is not obliged to do so: each UE data report can be submitted on a different HTTP connection if desired.

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| b) What do we mean by terminating a session? And why is it required? |

TS 26.532 does not specify an explicit mechanism to terminate a data reporting session. Data reporting sessions terminate naturally after a system-configurable time period of inactivity (i.e., no UE data reports sent) which is signalled to data collection clients in the DataReportingSession resource that provides them with their client configuration.

The reason for this design is to provide a mechanism for the 5G System to provide occasional updates to the client configuration (for example, informing it that it is no longer required to report certain parameters, or to vary the frequency or probability of reporting) without the need to use a "long polling" mechanism.

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| c) What are the impacts of session creation and termination on UE and network resources? |

The impact of session creation is in providing a JSON-encoded client configuration object called DataReportingSession and in maintaining a small amount of session state in the Data Collection AF. The minimal impact on network resources of transferring this occasionally across the data plane can be mitigated through the use of GZip transfer encoding in the HTTP transaction at reference point R2. The setting up of a data reporting session is intentionally designed to be simple, fast and cheap in terms of resource utilisation.

The impact of session expiry through inactivity is that a data collection client needs to obtain a new client configuration by requesting a new DataReportingSession from the Data Collection AF. However, a data collection client is not obliged to maintain an active data reporting session at all times, so the establishment of a new session with the Data Collection AF only needs to be done on the next occasion after expiry that the data collection client wishes to send a UE data report.

The need to set up a new data reporting session is reduced in practice because an up-to-date client configuration can be returned by the Data Collection AF in response to the submission of a UE data report by a data collection client. In reporting UE data, the data collection client is implicitly expressing an interest in the continued existence of the data reporting session. The Data Collection AF can, for example, use this indication to send an updated client configuration in the DataReportingSession document it returns with an extended lifetime. Most optimally, it would do so only shortly before the session is about to expire, or else if the client configuration has changed.

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| d) Can application client trigger DDCC to send an immediate report? |

The UE Application can send a report to the Direct Data Collection Client using the reportUeData method defined by TS 26.532 at reference point R7 (the UE client API). At present, this method does not specify a means to instruct the Direct Data Collection Client to override its configuration and send a UE data report immediately. However, SA4 believes that this API method could straightforwardly be enhanced to specify a parameter (e.g. expedite) that instructs the Direct Data Collection Client to prioritise immediate delivery of a UE data report to the Data Collection AF.

Furthermore, SA4 believes that the DataReport container type specified in TS 26.532 could be enhanced to include an expedited flag that instructs the Data Collection AF to prioritise the processing of the UE data report and exposure of the resulting event to downstream subscribers, such as the Application Service Provider's Event Consumer AF.

SA4 welcomes Release 18 co-ordination Change Requests to TS 26.531 and TS 26.532 from interested Individual Members at its forthcoming meetings, appropriately tagged with SA6 Work Item codes.

## 1.2 Feedback on clarified requirements

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| For,  2. The UE Application shall be able to send/push collected data on-demand (i.e. without need for setting up session) to ASP through a request/response mechanism  Consider a use case, where application client is already configured to collect required data (could be application specific way over R7 interface or client can one time fetch the configuration from DCAF over R2 interface). While using the service, the user/application client is having bad experience, and the application client needs to send collected data to the application server to take further course of action.  The requirements here are as follows:   * The client should have one time provisioning of configuration to know which performance data to collect while sending the report. * The client should send data report at any time whenever client/user is experiencing degradation of service. * For sporadic or infrequent data reports, the client should not be required to setup and terminate a Data Reporting Session (as specified in TS 26.532) every time it requires to share the data report(s). |

SA4 wishes to clarify that the Direct Data Collection Client in the UE obtains its configuration by invoking the Ndcaf\_DataReporting\_CreateSession service operation at reference point R2. It can then send data reports to the Data Collection AF at any time (including sporadically) using the Ndcaf\_DataReporting\_Report service operation at reference point R2. There is no need to set up a data reporting session every time it wishes to report UE data to the Data Collection AF because the data reporting session is long-lived, up to a system-configurable expiry time.

Together, these features of TS 26.532 in Release 17 appear to satisfy the requirements for an infrequent configuration of the Direct Data Collection Client and the ability to send UE data reports to the Data Collection AF sporadically without the need for setting up and terminating a data reporting session every time the Direct Data Collection Client needs to send a report.

SA4 believes that one-time provisioning of client configuration is not an achievable goal within the constraints of the EVEX framework set by SA2 in TS 23.288 and refined by SA4 in TS 26.531 because the set of UE data that a client is required to report to the Data Collection AF varies according to (i) current provisioning of the Data Collection AF by the Application Service Provider (a role that may be played by the MNO) and (ii) the needs of event consumers – such as NWDAF and/or the Application Service Provider's Event Consumer AF – currently subscribing to exposed events via SA2's Naf\_EventExposure service. Because both of these factors change dynamically (albeit slowly), the client configuration may also need to change.

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| For,  1. The ASP shall be able to retrieve/pull collected data on-demand (i.e. without need for setting up session) from the UE Application through a request/response mechanism.  SA4 reply indicates (trimmed):  “SA4 believes that this requirement is **partially met** by the EVEX framework in Release 17.”  “However, note that the above mechanism does not trigger a particular UE Application to send data on demand to the ASP, in which case the SA6 requirement is not met by the EVEX framework in Release 17.” |
| SA6 would like to indicate SA4 that SA6 requires a mechanism to trigger particular UE to send data on demand to the ASP.  Consider a use case, where an application server received service experience report from a UE-1, and in order to identify the problem, the application server selects few other UEs from the same location as UE-1 and requests to provide service experience report at that time immediately. This is used mainly for analytics performed in ADAES which is a SEAL service. Please note selection of UEs by application server is not within scope of SA6.  The requirements here are as follows:   * The application server/ASP should be able to pull service experience report from multiple UEs at given time. |

SA4 believes that this requirement could be achieved via reference point R8 in combination with the aforementioned expedited data reporting enhancement to the EVEX framework.

The Application Service Provider could "poll" selected UE Applications (by application-private means) and request that they each send an expedited UE data report to the Data Collection AF. Processing of these UE data reports would then be expedited by the Data Collection AF and the resulting events exposed with minimal delay to subscribers such as the Application Service Provider's Event Consumer AF.

# 2 Actions

**To SA6**

**ACTION:** SA4 asks SA6 to take the above information into account.

# 3 Dates of next TSG SA WG 4 meetings

SA4#125 21st–25th August 2023 Gothenburg, Sweden

SA4#126 13th–17th November 2023 Chicago, United States of America