**3GPP TSG-SA4#118-e *S4-220394***

**Online, 6-14 April 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **Pseudo CHANGE REQUEST** | | | | | | | | |
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|  | **TS 26.532** | **CR** |  | **rev** |  | **Current version:** | **1.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Update of Indirect Data Collection Client and Application Server text | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson LM, BBC | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EVEX | | | | |  | ***Date:*** | | | 2022-03-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Updates and corrections to the specification | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | -Added configuration and reporting for Indirect Data Collection Client  -Added configuration and reporting for Application Server | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Less complete specification | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.4 to 4.2.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | The changes done are basically the same as for the Direct Data Collection Client, see pCR S4-220387 | | | | | | | | |
| ***56*** | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

FIRST CHANGE

### 4.2.4 Configuration of Indirect Data Collection Client

#### 4.2.4.1 General

Indirect reporting operation involves first a UE Application instance sending domain-specific UE data to an Application Service Provider (ASP) server instance across reference point R8. That UE data is passed from to an Indirect Data Reporting Client function operated by the Application Service Provider to be subsequently sent as data reports, possibly in processed form, to a Data Collection AF instance. Operation of the latter procedure is conditioned upon the Indirect Data Collection Client having acquired its data collection and reporting configuration from the Data Collection AF by means of the Ndcaf\_DataReporting service (either directly across the reference point R3 or via an equivalent service exposed by the NEF, depending on whether the Indirect Data Collection Client and the Data Collection AF reside in the same or separate trust domains).

The Indirect Data Collection Client shall obtain its configuration by invoking the Data Collection and Reporting Configuration API associated with the Ndcaf\_DataReporting service, as described under clause 7.2.

The configuration information is contained in a generic data collection and reporting configuration envelope that shall include at minimum the baseline configuration parameters defined in clause 4.6.3 of TS 26.531 [7]. In particular, the configuration shall specify the domain-specific parameters associated with the specified Event ID(s) to be reported to the Data Collection AF.

#### 4.2.4.2 Indirect Data Collection Client retrieves its initial configuration by creating a Data Reporting Session

The call flow in figure 4.2.4.2‑1 shows the interaction between the Indirect Data Collection Client and the Data Collection AF at the initial configuration of the Indirect Data Collection Client.

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**Figure 4.2.4.2-1: Initial configuration of Indirect Data Collection Client**

The steps in this procedure are as follows:

1. The Indirect Data Collection Client invokes the *Ndcaf\_DataReporting\_CreateSession* service operation by sending an HTTP POST request to the Data Collection AF (see clauses 7.2.2.1 and 7.2.2.2.3.1). A *DataReportingSession* resource entity (see clause 7.2.3.2.1) is included in the request message body, but only properties *externalApplicationId* and *supportedDomains* are present (because the other properties are unknown to the Indirect Data Collection Client).

2. In its *201 Created* response, the Data Collection AF provides an extended version of the *DataReportingSession* resource entity in the message body, adding the properties *sessionId*, *validUntil*, *reportForDomains* and *reportingCondition* to the entity received from the Indirect Data Collection Client in step 1. The *validUntil* property of the provided *DataReportingSession* should be a time in the future.

The Indirect Data Collection Client is now configured.

#### 4.2.4.3 Updating and renewing data collection and reporting configuration

##### 4.2.4.3.1 Introduction

The data collection and reporting configuration may change as a result of subscriptions to events exposed by the Data Collection AF. There are two ways the data collection and reporting configuration can be updated or renewed by the Indirect Data Collection Client:

1. The Indirect Data Collection Client invokes the *Ndcaf\_DataReporting\_RetrieveSession* service operation (see clause 4.2.4.3.2).

2. The Data Collection AF supplies a *DataReportingSession* in response to a data report submitted by the Indirect Data Collection Client (see clause 4.2.4.3.3).

##### 4.2.4.3.2 Indirect Data Collection Client retrieves up-to-date configuration

This operation is typically performed when the *validUntil* property of the current *DataReportingSession* stored in the Indirect Data Collection Client is about to expire.



**Figure 4.2.4.3.2-1: Indirect Data Collection Client retrieves up-to-date DataReportingSession**

The steps in this procedure are as follows:

1. The Indirect Data Collection Client requests the *DataReportingSession* for the current session by using the *Ndcaf\_DataReporting \_RetreiveSession* service operation (see clauses 7.2.2.1 and 7.2.2.3.3.1).

2. The Data Collection AF provides the latest *DataReportingSession* in the message body of a *200 OK* response. The *validUntil* property of the provided *DataReportingSession* should be a time in the future. In addition, the Data Collection AF may change properties *reportForDomains* and *reportingCondition*.

##### 4.2.4.3.3 DataReportingSession updated in response to data reporting

See clause 4.2.6.

#### 4.2.4.4 Indirect Data Collection Client destroys Data Reporting Session

The Indirect Data Collection Client may destroy a Data Reporting Session and the data collection and reporting configuration it represents by invoking the *Ndcaf\_DataReporting\_DestroySession* service operation.



**Figure 4.2.4.4-1: Indirect Data Collection Client destroys DataReportingSession**

The steps in this procedure are as follows:

1. The Indirect Data Collection Client invokes the *Ndcaf\_DataReporting\_DestroySession* service operation by sending an HTTP DELETE request to the Data Collection AF (see clauses 7.2.2.1 and 7.2.2.3.3.2).

2. The Data Collection AF acknowledges the destruction of the session and its configuration with a *204 No Content* response.

NEXT CHANGE

### 4.2.5 Configuration of Application Server

#### 4.2.5.1 General

An Application Server (AS) instance, as a type of data collection client, acquires its domain-specific data collection and reporting configuration from a Data Collection AF instance by means of the Ndcaf\_DataReporting service (either directly across reference point R4 or via an equivalent service exposed by the NEF, depending on whether the AS and the Data Collection AF reside in the same or separate trust domains).

Similar to clause 4.2.4, the AS shall obtain its configuration by invoking the *Data Collection and Reporting Configuration API* associated with the Ndcaf\_DataReporting service, as described under clause 7.2.

The configuration information is contained in a generic data collection and reporting configuration envelope that shall include at minimum the baseline configuration parameters defined in clause 4.6.3 of TS 26.531 [7]. The configuration shall specify the domain-specific parameters associated with the specified Event ID(s) to be reported to the Data Collection AF.

#### 4.2.5.2 Application Server retrieves its initial configuration by creating a Data Reporting Session

The call flow in figure 4.2.5.2‑1 shows the interaction between the Application Server and the Data Collection AF at the initial configuration of the Application Server.

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**Figure 4.2.5.2-1: Initial configuration of Application Server**

The steps in this procedure are as follows:

1. The Application Server invokes the *Ndcaf\_DataReporting\_CreateSession* service operation by sending an HTTP POST request to the Data Collection AF (see clauses 7.2.2.1 and 7.2.2.2.3.1). A *DataReportingSession* resource entity (see clause 7.2.3.2.1) is included in the request message body, but only properties *externalApplicationId* and *supportedDomains* are present (because the other properties are unknown to the Application Server).

2. In its *201 Created* response, the Data Collection AF provides an extended version of the *DataReportingSession* resource entity in the message body, adding the properties *sessionId*, *validUntil*, *reportForDomains* and *reportingCondition* to the entity received from the Application Server in step 1. The *validUntil* property of the provided *DataReportingSession* should be a time in the future.

The Application Server is now configured.

#### 4.2.5.3 Updating and renewing data collection and reporting configuration

##### 4.2.5.3.1 Introduction

The data collection and reporting configuration may change as a result of subscriptions to events exposed by the Data Collection AF. There are two ways the data collection and reporting configuration can be updated or renewed by the Application Server:

1. The Application Server invokes the *Ndcaf\_DataReporting\_RetrieveSession* service operation (see clause 4.2.5.3.2).

2. The Data Collection AF supplies a *DataReportingSession* in response to a data report submitted by the Application Server (see clause 4.2.5.3.3).

##### 4.2.5.3.2 Application Server retrieves up-to-date configuration

This operation is typically performed when the *validUntil* property of the current *DataReportingSession* stored in the Application Server is about to expire.



**Figure 4.2.5.3.2-1: Application Server retrieves up-to-date DataReportingSession**

The steps in this procedure are as follows:

1. The Application Server requests the *DataReportingSession* for the current session by using the *Ndcaf\_DataReporting \_RetreiveSession* service operation (see clauses 7.2.2.1 and 7.2.2.3.3.1).

2. The Data Collection AF provides the latest *DataReportingSession* in the message body of a *200 OK* response. The *validUntil* property of the provided *DataReportingSession* should be a time in the future. In addition, the Data Collection AF may change properties *reportForDomains* and *reportingCondition*.

##### 4.2.5.3.3 DataReportingSession updated in response to data reporting

See clause 4.2.7.

#### 4.2.5.4 Application Server destroys Data Reporting Session

The Application Server may destroy a Data Reporting Session and the data collection and reporting configuration it represents by invoking the *Ndcaf\_DataReporting\_DestroySession* service operation.



**Figure 4.2.5.4-1: Application Server destroys DataReportingSession**

The steps in this procedure are as follows:

1. The Application Server invokes the *Ndcaf\_DataReporting\_DestroySession* service operation by sending an HTTP DELETE request to the Data Collection AF (see clauses 7.2.2.1 and 7.2.2.3.3.2).

2. The Data Collection AF acknowledges the destruction of the session and its configuration with a *204 No Content* response.

NEXT CHANGE

### 4.2.6 Indirect data reporting

After acquiring its data collection and configuration from the Data Collection AF, and in accordance with this configuration, the Indirect Data Collection Client shall send reporting domain-specific data reports to the Data Collection AF by invoking the *Data Reporting API* associated with *Ndcaf\_DataReporting* service across reference point R3 as described under clause 7.3. The data reports shall be supplied in a generic data report envelope that includes at minimum the baseline information for data reporting defined in clause 4.6.4 of TS 26.531 [7].

The call flow in figure 4.2.6‑1 shows the procedure for indirect data reporting.

NOTE: It is assumed that the Indirect Data Collection Client is already configured per the procedures specified in clause 4.2.4.



**Figure 4.2.6-1: Indirect data reporting**

1. When the *reportCondition* of a *DataReportingSession* is fulfilled, the Indirect Data Collection Client invokes the *Ndcaf\_DataReporting\_Report* service operation (see clauses 7.3.2.1 and 7.3.2.2.3.1) by issuing an HTTP POST request to the Data Collection AF. The request message body is a *DataReport* (see clause 7.3.3.2.1).

2. In the HTTP response the Data Collection AF may provide an up-to-date *DataReportingSession*. The Indirect Data Collection Client shall take note of any changes and act accordingly.

NEXT CHANGE

### 4.2.7 Reporting by Application Server

After acquiring its data collection and configuration from the Data Collection AF, and in accordance with this configuration, the Application Server shall send reporting domain-specific data reports to the Data Collection AF by invoking the *Data Reporting API* associated with *Ndcaf\_DataReporting* service across reference point R4 as described under clause 7.3. The data reports shall be supplied in a generic data report envelope that includes at minimum the baseline information for data reporting defined in clause 4.6.4 of TS 26.531 [7].

The call flow in figure 4.2.7‑1 shows the procedure for data reporting by the Application Server.

NOTE: It is assumed that the Application Server is already configured per the procedures specified in clause 4.2.5.



**Figure 4.2.7-1: Data reporting by Application Server**

1. When the *reportCondition* of a *DataReportingSession* is fulfilled, the Application Server invokes the *Ndcaf\_DataReporting\_Report* service operation (see clauses 7.3.2.1 and 7.3.2.2.3.1) by issuing an HTTP POST request to the Data Collection AF. The request message body is a *DataReport* (see clause 7.3.3.2.1).

2. In the HTTP response the Data Collection AF may provide an up-to-date *DataReportingSession*. The Application Server shall take note of any changes and act accordingly.

END OF CHANGES