**SA WG2 Meeting #143eS2-210**

**Feb 24th – March 9th, 2021 ; Elbonia (revision of S2-210)**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **23.288** | **CR** |  | **rev** | **-** | **Current version:** | **16.7.0** |  |
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| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Data Collection using DCCF |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | S2 |
|  |  |
| ***Work item code:*** | eNA\_Ph2 |  | ***Date:*** | 2021-01-18 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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 canbe 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | As part of KI#11 conclusions for eNA\_Ph2, SA2 “Signaling reducation via architectural changes” it was agreed that the DCCF would coordinate data collection. |
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| ***Summary of change:*** | Addition of procedures to request/subscribe to data using a DCCF, with two variants: one where the analytics are provided via DCCF, and the other where analytics are provided via a messaging framework. |
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| ***Consequences if not approved:*** |  |
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| ***Clauses affected:*** | New section 6.2 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

*FIRST CHANGE (all new text)*

### 6.2.X Data Collection using DCCF

#### 6.2.x.1 General

This clause specifies procedures for data collection using the DCCF described in section 5A for cases other than obtaining analytics from an NWDAF, which is described in clause 6.1.x. Two options are supported: data delivered via the DCCF, as per clause 6.2.x.2, and data delivered via a messaging framework as per clause 6.2.x.3.

#### 6.2.x.2 Data Collection via DCCF

The procedure depicted in figure 6.2.x.2-1 is used by a data consumer (s) (e.g. NWDAF) to obtain data via the DCCF using Ndccf\_DataManagement\_Subscribe service operation. Whether the data consumer directly contacts the Data Source NF or goes via the DCCF is based on configuration of the consumer.



Figure 6.2.x.2-1: Data Subscriptions via DCCF

1. The data consumer subscribes to data via the DCCF by invoking the Ndccf\_DataManagement\_Subscribe(NF\_Service\_Operation, Data Specification, Formatting Instructions, Processing Instructions, NF (or NF-Set) ID, ADRF Information) service operation. The data consumer may specify one or more notification endpoints.

NF\_Service\_Operation is the service operation to be used by the DCCF to request data (e.g.: Namf\_EventExposure\_Subscribe) when data needs to be retrieved from an NF. Data Specification provides NF\_Service Operation-specific required parameters (e.g. event IDs, UE-ID(s), target of event reporting) and optional input parameters used to retrieve the data, and Formatting and Processing Instructions are as defined in clause 5A4. The Data Consumer may include the Data Source, e.g. NF Instance (or NF Set) ID. The Data consumer may include ADRF information indicating whether the data are to be stored in an ADRF, and optionally an ADRF ID.

Editor's note: Data retrieval from OAM needs to be added to the description.

Editor’s Note: Clause xx will provide the Ndccf\_DataManagement service description

1. If the NF instance or NF Set ID is not provided by the Data Consumer. the DCCF determines the NF instances that can provide data as described in clause 5A.2 and clause 6.2.2.2. If the consumer requested storage of data in an ADRF but the ADRF ID is not provided by the Data Consumer, or the collected data is to be stored in an ADRF according to configuration on the DCCF, the DCCF selects an ADRF to store the collected data.
2. The DCCF determines whether the data requested in step 1 are already being collected, as described in clause 5A.2.

If the data requested are already being collected by an data consumer, the DCCF adds the data consumer to the list of data consumers that are subscribed for these data.

1. If the data subscribed in step 1 partially matches data that are already being collected by the DCCF from a Data Source, and a modification of this subscription to the Data Source would satisfy both the existing data subscriptions as well as the newly requested data, the DCCF invokes Nnf\_EventExposure\_Subscribe(Subscription Correlation ID) with parameters indicating how to modify the previous subscription (as specified in clause 5A.2). The DCCF adds the data consumer to the list of data consumers that are subscribed for these data.

 If the data requested at step 1 are not already available or not being collected yet, the DCCF subscribes to data from the NF using the Nnf\_EventExposureSubscribe(Data Specification, Notification Target Address=DCCF (+ Notification Correlation ID)) service operation as specified in clause 5A.2 and clause 6.2.2.2. The DCCF adds the data consumer to the list of data consumers that are subscribed for these data.

5. When new output data are available, the Data Source NF uses Nnf\_EventExposure\_Notify to send the data to the DCCF.

6. The DCCF uses Ndccf\_DataManagement\_Notify to provide the data to all data consumers and notification endpoints that are subscribed to the data. Notifications to each data consumer and notification endpoint may be processed and formatted so they conform to delivery requirements for each data consumer or notification endpoint as specified in clause 5A.4

The DCCF may store the information in ADRF if requested by consumer or if required by DCCF configuration.

The procedure depicted in figure 6.1.x.2-2 is used by data consumers (e.g. NWDAF) to request historical data identified by a time window in the past. The Data Consumer requests data using Ndccf\_DataManagement\_Request service operation as specified in clause 7.2.a. Whether the Data consumer uses this procedure or directly contacts the ADRF is based on configuration.



Figure 6.2.x.2-2: Data Requests via DCCF

1. Consumer requests data via DCCF by invoking the Ndccf\_DataManagement\_Request(NF\_Service\_Operation, Data Specification, Time Window, Formatting Instructions, Processing Instructions, NF (or NF-Set) ID) as specified in clause 7.x.y.

Time Window specifies a past time period and comprises a start and stop time, and Formatting and Processing Instructions are as defined in clause 5A4.

1. If an NF instance or NF Set ID is not provided by the Data Consumer, the DCCF determines if ADRF instances can provide the data as described in clause 5B and 5A.2. Note that an ADRF may have previously registered data it is collecting with the DCCF.

Editor’s Note: clause 5B is to provide an ADRF functional description. ADRF selection by the DCCF may be based on the ADRF profile in the NRF (eg: ADRF that stores data for a specific NF Type in a geographic area) in addition to registrations by the ADRF to the DCCF of data the ADRF is collecting.

3. (conditional) If the DCCF determines that an ADRF instance can provide the data, or an ADRF NF-ID was supplied by the Data Consumer, the DCCF sends a request to the ADRF, using Nadrf\_DataRetrieval\_Request (Data Specification, Notification Target Address=DCCF) service operation.

Editor's note: Appropriate reference to service operation specification clause will be added when available.

4. (conditional) If the ADRF receives a request for data, it determines if the data are available in its repository. If the requested data are available, the ADRF returns the data to the DCCF using the Nadrf\_DataRetreival\_Request response. If the requested data are not available, the ADRF shall indicate "Not found" in the response message.

1. If the ADRF cannot provide the requested data, and an NWDAF NF-ID is not provided by the Data Consumer the DCCF determines if an NWDAF instance can provide data as described in clause 5A.2. Note that the NWDAF may have previously registered data it is collecting with the DCCF.

6. (conditional) If the DCCF determines that an NWDAF instance can provide the data or an NWDAF NF-ID was supplied by the Data Consumer, the DCCF sends a request to the NWDAF using Nnwdaf\_DataManagement\_Request(Data Specification, Notification Target Address=DCCF).

Editor's note: Appropriate reference to service operation specification clause will be added when available.

7. (conditional) If the NWDAF receives a request for data, it determines if the data are available. If the requested data are available, the NWDAF returns the data to the DCCF using the Nnwdaf\_Data Management Request response. If the requested data are not available, the NWDAF shall indicate "Not found" in the response message.

8. The DCCF uses Ndccf\_DataManagement\_RequestResponse to provide the requested data to data consumers. Responses to each data consumer are processed and formatted so they conform to delivery requirements for each data consumer as specified in clause 5B.

Editor’s Note: Data Collection via Messaging Framework is to be completed based on procedures above.

*END OF CHANGES*