**3GPP TSG-CT WG4 Meeting #101eC4-205**

**E-Meeting, 3rd – 13th November 2020 was C4-205297**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.562** | **CR** | **0031** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | S-CSCF selection |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | eIMS5G\_SBA |  | ***Date:*** | 2020-11-09 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | Before the I-CSCF selects a suitable S-CSCF it needs to retrieve selection assistance information from the HSS. |
|  |  |
| ***Summary of change:*** | Add procedure, resource, method, data model and OpenAPI definitions for S-CSCF Selection Assistance Information retrieval.  |
|  |  |
| ***Consequences if not approved:*** | S-CSCF Selection Assistance Information cannot be retrieved from the HSS. |
|  |  |
| ***Clauses affected:*** | 5.3.2.2.1, 5.3.2.2.3.x (new), 6.2.3.1, 6.2.3.xx (new), 6.2.6.1, 6.2.6.2.xx (new), A.3 |
|  |  |
|  | **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:*** | This CR introduces backwards compatible corrections to the Nhss\_imsSDM API. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First Change \* \* \* \*

##### 5.3.2.2.1 General

The following procedures using the Get service operation are supported:

- Repository Data Retrieval

- IMS Identity Data (e.g. IMS associated identities including Implicit Registration Set and Alias Group) Retrieval

- IMS Profile Data (e.g. IFCs) Retrieval

- IMS Location Data Retrieval

- IMS Registration Status Data Retrieval

- Access Data (e.g. T-ADS) Retrieval

- SRVCC Data (e.g. STN-SR) Retrieval

- Service Data (e.g. DSAI) Retrieval

- Retrieval Of Multiple Data Sets

- Shared Subscription Data Retrieval

- Trace Data Retrieval

- PSI Activation State Retrieval

- DSAI information Retrieval

- S-CSCF Selection Assistance Information Retrieval

When the feature SharedData is supported and the retrieved UE-individual data (i.e. data other than Shared Subscription Data) contain SharedDataIds, the NF service consumer shall also retrieve the shared data identified by the received shared data Ids unless the identified shared data are already available at the NF service consumer. The order of sequence of sharedDataIds within UE-individual data is significant: Individual data take precedence over shared data; shared data "SharedDataX" identified by a sharedDataId X takes precedence over shared data "SharedDataY" identified by a sharedDataId Y if X appears before Y within the list of SharedDataIds in the UE-individual data.

\* \* \* Next Change \* \* \* \*

###### 5.3.2.2.3.x S-CSCF Selection Assistance Information Retrieval

Figure 5.3.2.2.3.x-1 shows a scenario where the NF service consumer (I-CSCF), sends a request to the HSS to receive the UE's S-CSCF Selection Assistance Information. The request contains the UE's identity (/{imsUeId}), the type of the requested information (/ims-data/location-data/scscf-selection-assistance-info) and query parameters (e.g. supported-features). 

5.3.2.2.3.1-1: S-CSCF Selection assistance Information Retrieval

1. The NF service consumer (I-CSCF) sends a GET request to the resource representing the UE's S-CSCF Selection Assistance Information with query parameters indicating the supported-features.

2a. On success, the HSS responds with "200 OK" with the message body containing the UE's S-CSCF Selection Assistance Information.

2b. If there is no valid subscription data for the UE, HTTP status code "404 Not Found" shall be returned and it should include additional error information in the response body (in the "ProblemDetails" element).

On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the GET response body.

\* \* \* Next Change \* \* \* \*

#### 6.2.3.1 Overview



Figure 6.2.3.1-1: Resource URI structure of the Nhss\_imsSDM API



Figure 6.2.3.1-2: Resource URI structure of the Nhss\_imsSDM API

Table 6.2.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.2.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name(Archetype) | Resource URI | HTTP method or custom operation | Description |
| Repository Data(Document) | /{imsUeId}/repository-data/{serviceIndication} | GET | Retrieve repository data for a service indication |
| DELETE | Delete repository data for a service indication |
| PUT | Update repository data for a service indication |
| IMS Associated Identities(Document) | /{imsUeId}/identities/ims-associated-identities | GET | Retrieve the UE's IMS associated identities (implicit and alias) |
| MSISDNs(Document) | /{imsUeId}/identities/msisdns | GET | Retrieve the UE's MSISDNs (basic and additional) |
| PrivateIdentities(Document) | /{imsUeId}/identities/private-identities | GET | Retrieve the UE's Private Identities (IMPI and IMSI) |
| ImeiSvInformation(Document) | /{imsUeId}/identities/imeisv | GET | Retrieve the UE's IMEISV |
| IMS Profile Data(Document) | /{imsUeId}/ims-data/profile-data | GET | Retrieve the UE's subscribed Profile |
| Initial Filter Criteria(Document) | /{imsUeId}/ims-data/profile-data/ifcs | GET | Retrieve the UE's subscribed Initial Filter Criteria |
| Service Level Trace Information(Document) | /{imsUeId}/ims-data/profile-data/service-level-trace-info | GET | Retrieve the UE's subscribed Service Level Trace Information |
| Service Priority Information(Document) | /{imsUeId}/ims-data/profile-data/priority-levels | GET | Retrieve the UE's subscribed Service Priority Levels |
| ImsServerNameAndCaps(Document) | /{imsUeId}/ims-data/location-data | GET | Retrieve the UE's S-CSCF name and the server capabilities in IMS |
| IMS Location Data(Document) | /{imsUeId}/ims-data/location-data/server-name | GET | Retrieve the UE's S-CSCF name |
| S-CSCF Capabilities(Document) | /{imsUeId}/ims-data/location-data/scscf-capabilities | GET | Retrieve the UE's S-CSCF capabilities (mandatory and/or optional) |
| IMS Registration Status(Document) | /{imsUeId}/ims-data/registration-status | GET | Retrieve the UE's IMS registration status. |
| Subscriptions(Collection) | /{imsUeId}/subscriptions | POST | Create a subscription |
| Individual subscription(Document) | /{imsUeId}/subscriptions/{subscriptionId} | DELETE | Delete the subscription identified by {subscriptionId}, i.e. unsubscribe |
| PATCH | Modify the sdm-subscription identified by {subscriptionId} |
| PS Location Information(Document) | /{imsUeId}/access-data/ps-domain/location-data | GET | Retrieve the UE's location in PS domain |
| CS Location Information(Document) | /{imsUeId}/access-data/cs-domain/location-data | GET | Retrieve the UE's location in CS domain |
| PsUserState(Document) | /{imsUeId}/access-data/ps-domain/user-state | GET | Retrieve the UE's state in PS domain |
| CsUserState(Document) | /{imsUeId}/access-data/cs-domain/user-state | GET | Retrieve the UE's state in CS domain |
| TadsInfo(Document) | /{imsUeId}/access-data/ps-domain/tads-info | GET | Retrieve the UE's T-ADS information |
| UeReachabilityIpSubscriptions(Collection) | /{imsUeId}/access-data/ps-domain/ue-reach-subscriptions | POST | Create a subscription to UE Reachability for IP |
| UE reachability individual subscription(Document) | /{imsUeId}/access-data/ps-domain/ue-reach-subscriptions/{subscriptionId} | DELETE | Delete the subscription to UE reachability for IP identified by {subscriptionId}, i.e. unsubscribe |
| PATCH | Modify the subscription to UE reachability for IP identified by {subscriptionId} |
| IpAddress(Document) | /{imsUeId}/access-data/ps-domain/ip-address | GET | Retrieve the UE's stored IP Address Secure Binding Information |
| Csrn(Document) | /{imsUeId}/access-data/cs-domain/csrn | GET | Retrieve a CSRN for the UE |
| ReferenceAccessLocation(Document) | /{imsUeId}/access-data/wireline-domain/reference-location | GET | Retrieve the UE's subscribed Reference Access Location |
| SRVCC Data(Document) | /{imsUeId}/srvcc-data | GET | Retrieve the UE's STN-SR and SRVCC capability |
| PATCH | Update the UE's STN-SR. |
| PSI Activation State(Document) | /{imsUeId}/service-data/psi-state | GET | Retrieve a PSI activation status |
| PATCH | Update a PSI activation status |
| Dsai(Document) | /{imsUeId}/service-data/dsai | GET | Retrieve DSAI data (i.e. DSAI tags and status) associated to an Application Server |
| PATCH | Update DSAI data associated to an Application Server |
| SMSRegistrationInfo(Document) | /{imsUeId}/service-data/sms-registration-info | GET | Retrieve the SMS Registration Information (e.g. IP-SM-GW address) |
| PUT | Creates or updates the SMS Registration Information (e.g. IP-SM-GW address) |
| DELETE | Deletes the SMS Registration Information (e.g. IP-SM-GW address) |
| SharedData(Collection) | /shared-data | GET | Retrieve shared data |
| SharedDataSubscriptions(Collection) | /shared-data-subscriptions | POST | Create a subscription |
| Shared Data Individual Subscription(Document) | /shared-data-subscriptions/{subscriptionId} | DELETE | Delete the subscription identified by {subscriptionId}, i.e. unsubscribe |
| PATCH | Modify the subscription identified by {subscriptionId} |
| S-CSCF Selection Assistance Information(Document) | /{imsUeId}/ims-data/location-data/scscf-selection-assistance-info | GET | Retrieve the UE's S-CSCF Selection Assistance Information |

\* \* \* Next Change \* \* \* \*

#### 6.2.3.xx Resource: S-CSCF Selection Assistance Information

##### 6.2.3.xx.1 Description

This resource represents the S-CSCF selection assistance information. It is queried by the service consumer (I-CSCF) before S-CSCF selection.

##### 6.2.3.xx.2 Resource Definition

Resource URI: **{**apiRoot}/nhss-ims-sdm/{apiVersion}/{imsUeId}/ims-data/location-data/scscf-selection-assistance-info

This resource shall support the resource URI variables defined in table 6.2.3.xx.2-1.

Table 6.2.3.xx.2-1: Resource URI variables for this resource

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 6.2.1 |
| apiVersion | See clause 6.2.1 |
| imsUeId | Represents the IMS Public Identity (i.e. IMS Public User identity or Public Service Identity) pattern: "^(sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}|tel\:\+[0-9]{5,15})$" |

##### 6.2.3.xx.3 Resource Standard Methods

###### 6.2.3.xx.3.1 GET

This method shall support the URI query parameters specified in table 6.2.3.xx.3.1-1.

Table 6.2.3.xx.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| n/a |  |  |  |  |  |

This method shall support the request data structures specified in table 6.2.3.xx.3.1-2 and the response data structures and response codes specified in table 6.2.3.4.3.1-3.

Table 6.2.3.xx.3.1-2: Data structures supported by the GET Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 6.2.3.xx.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| ScscfSelectionAssistanceInformation | M | 1 | 200 OK | A response body containing the S-CSCF Selection Assistance Information. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to indicate one of the following application errors:- USER\_NOT\_FOUND- DATA\_NOT\_FOUNDNOTE: DATA\_NOT\_FOUND indicates that any S-CSCF can be selected, e.g. based on I-CSCF local policy. |
| ProblemDetails | O | 0..1 | 403 Forbidden | The "cause" attribute may be used to indicate the following application error:- OPERATION\_NOT\_ALLOWED |

\* \* \* Next Change \* \* \* \*

#### 6.2.6.1 General

This clause specifies the application data model supported by the API.

Table 6.2.6.1-1 specifies the data types defined for the Nhss\_imsSDM service API.

Table 6.2.6.1-1: Nhss\_imsSDM specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| ScscfCapabilityList | 6.2.6.2.2 | Information about mandatory and optional S-CSCF capabilities  |
| ImsProfileData | 6.2.6.2.4 | User's IMS profile data |
| RepositoryData | 6.2.6.2.7 | Repository Data for the requested Service Indication |
| MsisdnList | 6.2.6.2.8 | List of MSISDNs associated to the IMS public Identity  |
| PublicIdentities | 6.2.6.2.9 | IMS Public Identities which belong to the same Implicit Registration Set (if any) than the requested IMS Public Identity |
| PublicIdentity | 6.2.6.2.10 | IMS Public Identity and the related data (Alias Group Id, IRS default indication, Identity Type) |
| ImsSdmSubscription | 6.2.6.2.11 | A subscription to notifications of data change |
| ImsRegistrationStatus | 6.2.6.2.12 | Registration status of the user. |
| PriorityLevels | 6.2.6.2.13 | Namespaces and priority levels allowed for the IMS public Identity. |
| Ifcs | 6.2.6.2.14 | List of IFCs associated to the IMS public Identity |
| Ifc | 6.2.6.2.15 |  |
| TriggerPoint | 6.2.6.2.16 |  |
| Spt | 6.2.6.2.17 |  |
| HeaderSipRequest | 6.2.6.2.18 |  |
| SdpDescription | 6.2.6.2.19 |  |
| ApplicationServer | 6.2.6.2.20 |  |
| ImsLocationData | 6.2.6.2.21 | IMS Location Data (S\_CSCF name) |
| ServiceLevelTraceInformation | 6.2.6.2.22 | IMS Service Level Trace Information |
| PsLocation | 6.2.6.2.23 | Location data in PS domain. |
| SgsnLocationData | 6.2.6.2.24 |  |
| MmeLocationData | 6.2.6.2.25 |  |
| AmfLocationData | 6.2.6.2.26 |  |
| TwanLocationData | 6.2.6.2.27 |  |
| CsLocation | 6.2.6.2.28 | Location data in CS domain. |
| CsgInformation | 6.2.6.2.29 |  |
| SrvccData | 6.2.6.2.30 | UE SRVCC capability (if available) and STN-SR (if subscribed) |
| PsiActivationState | 6.2.6.2.31 | Public Service Identity activation state |
| ImeiSvInformation | 6.2.6.2.34 | IMEI(SV) information |
| IpAddress | 6.2.6.2.35 | IPv4 address, IPv6 address or IPv6 prefix and/or IPv6 interface identifier |
| TadsInformation | 6.2.6.2.36 | T-ADS Information |
| UeReachabilitySubscription | 6.2.6.2.37 | A subscription to notifications of UE reachability for IP. |
| UeReachabilityNotification | 6.2.6.2.38 | A notification of UE reachability for IP. |
| PsUserState | 6.2.6.2.39 | User state in PS domain |
| CsUserState | 6.2.6.2.40 | User state in CS domain |
| Csrn | 6.2.6.2.41 | CS domain routeing number |
| ReferenceLocationInformation | 6.2.6.2.42 | Reference Location Information for the user in fixed access networks. |
| SmsRegistrationInfo | 6.2.6.2.43 | SMS Registration Information (IP-SM-GW number and SC address) |
| IpSmGwAddress | 6.2.6.2.44 | IP-SM-GW number and diameter URI/realm |
| ImsAssociatedIdentities | 6.2.6.2.45 |  |
| DsaiTagInformation | 6.2.6.2.46 | DSAI tag information (list of DSAI tags activation state for an Application Server) |
| DsaiTagStatus | 6.2.6.2.47 | DSAI tag status (DSAI tag and activation state) |
| ScscfSelectionAssistanceInformation | 6.2.6.2.xx | This information shall be used by the I-CSCF to select an S-CSCF for the UE |

Table 6.2.6.1-2 specifies data types re-used by the Nhss\_imsSDM service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nhss\_imsSDM.

Table 6.2.6.1-2: Nhss\_imsSDM re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Uri | 3GPP TS 29.571 [16] | Uniform Resource Identifier |
| SupportedFeatures | 3GPP TS 29.571 [16] | see 3GPP TS 29.500 [4] clause 6.6 |
| ModificationNotification | 3GPP TS 29.503 [15] | Payload of the notification after a data change |
| EutraLocation | 3GPP TS 29.571 [16] | E-UTRAN user location |
| NrLocation | 3GPP TS 29.571 [16] | NR user location |
| PlmnId | 3GPP TS 29.571 [16] | PLMN Identity |
| TimeZone | 3GPP TS 29.571 [16] | Time Zone and Daylight Saving Time |
| UtraLocation | 3GPP TS 29.571 [16] | UTRAN user location |
| GeraLocation | 3GPP TS 29.571 [16] | GERAN user location |
| DiameterIdentity | 3GPP TS 29.571 [16] | Diameter URI |
| NfInstanceId | 3GPP TS 29.571 [16] | String uniquely identifying a NF instance |
| RatType | 3GPP TS 29.571 [16] | RAT type |
| StnSr | 3GPP TS 29.571 [16] | Session Transfer Number for SRVCC |
| PatchItem | 3GPP TS 29.571 [16] | Patch Item |
| PatchResult | 3GPP TS 29.571 [16] | Patch Result |
| Ipv4Addr | 3GPP TS 29.571 [16] | IPv4 address |
| Ipv6Addr | 3GPP TS 29.571 [16] | IPv6 address |
| Ipv6Prefix | 3GPP TS 29.571 [16] | IPv6 address prefix |
| DateTime | 3GPP TS 29.571 [16] | UTC time |
| AccessType | 3GPP TS 29.571 [16] | Type of access |

\* \* \* Next Change \* \* \* \*

##### 6.2.6.2.xx Type: ScscfSelectionAssistanceInformation

Table 6.2.6.2.xx-1: Definition of type ScscfSelectionAssistanceInformation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| scscfCapabilityList | ScscfCapabilityList | C | 0..1 | Information about mandatory and optional S-CSCF capabilities.Shall be present if scscfNames is absent; may be present otherwise. |
| scscfNames | array(string) | C | 1..N | a list of S-CSCF names the UE can be steered to. Each strings shall contain a SIP-URL as defined in IETF RFC 3261 [22] to identify a SIP server (S-CSCF)Shall be present if scscfCapabilityList is absent; may be present otherwise. |

\* \* \* Next Change \* \* \* \*

## A.3 Nhss\_imsSDM API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*

 /{imsUeId}/ims-data/location-data/scscf-capabilities:

 get:

 summary: Retrieve the S-CSCF capabilities for the associated IMS subscription

 operationId: GetScscfCapabilities

 tags:

 - Retrieval of the S-CSCF capabilities for the IMS subscription

 security:

 - {}

 - oAuth2ClientCredentials:

 - nhss-ims-sdm

 - oAuth2ClientCredentials:

 - nhss-ims-sdm

 - nhss-ims-sdm:scscf-capabilities:read

 parameters:

 - name: imsUeId

 in: path

 description: IMS Identity

 required: true

 schema:

 $ref: '#/components/schemas/ImsUeId'

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ScscfCapabilityList'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 '504':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/504'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /{imsUeId}/ims-data/location-data/scscf-selection-assistance-info:

 get:

 summary: Retrieve the S-CSCF selection assistance info

 operationId: GetScscfSelectionAssistanceInfo

 tags:

 - Retrieval of the S-CSCF selection assistance information for the IMS subscription

 security:

 - {}

 - oAuth2ClientCredentials:

 - nhss-ims-sdm

 - oAuth2ClientCredentials:

 - nhss-ims-sdm

 - nhss-ims-sdm:scscf-selection-assistance-info:read

 parameters:

 - name: imsUeId

 in: path

 description: IMS Identity

 required: true

 schema:

 $ref: '#/components/schemas/ImsUeId'

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ScscfSelectionAssistanceInformation'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 '504':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/504'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*

 DsaiTagStatus:

 type: object

 required:

 - dsaiTag

 - dsaiState

 properties:

 dsaiTag:

 type: string

 dsaiState:

 $ref: '#/components/schemas/ActivationState'

 ScscfSelectionAssistanceInformation:

 type: object

 properties:

 scscfCapabilityList:

 $ref: '#/components/schemas/ScscfCapabilityList'

 scscfNames:

 type: array

 items:

 type: string

 minItems: 1

 anyOf:

 - required: [scscfCapabilityList]

 - required: [scscfNames]

# SIMPLE TYPES:

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* End Of Change \* \* \* \*