**3GPP TSG CT WG3 Meeting #142 *C3-25xxxx***

**Goteborg, Sweden, 25 – 29 August, 2025 (Revision of C3-253397)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.122** | **CR** | **0966** | **rev** | **1** | **Current version:** | **19.3.0** |  |
|  | | | | | | | | |
| *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:*** | Update the multiplexed media information over NEF interface | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Huawei, China Mobile, Nokia, InterDigital Communications | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | XRM\_Ph2 | | | | |  | ***Date:*** | | | 2025-08-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | TS 23.502 stated, the AF may include the SRTP Multiplexed Media Identification Information in the FlowDescription as:  *The AF may include (S)RTP Multiplexed Media Identification Information in the Flow Description and separate service requirements per media flow and requests for differentiated QoS handling for media flows multiplexed into a single UDP/IP traffic flow as described in clause 6.1.3.27.7 of TS 23.503 [20].*  Therefore, it is clear that the multiplexed media information shall be defined in the flow description. In stage 3, the data type for the multiplexed media information is still open with editor’s note and now it can be removed and finalized with SA4 LS reply. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Update the FlowInfo to be able to include the multiplexed media identification information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Multiplexed media identificaiton information is not complete and not aligned with SA2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.1, A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 backward compatible feature to the following APIs: TS29122\_AsSessionWithQoS.yaml  TS29122\_ChargeableParty.yaml  TS29122\_CommonData.yaml  TS29503\_Nudm\_PP.yaml  TS29503\_Nudm\_SDM.yaml  TS29505\_Subscription\_Data.yaml  TS29517\_Naf\_EventExposure.yaml  TS29518\_Namf\_Communication.yaml  TS29519\_Application\_Data.yaml  TS29520\_Nnwdaf\_AnalyticsInfo.yaml  TS29520\_Nnwdaf\_DataManagement.yaml  TS29520\_Nnwdaf\_EventsSubscription.yaml  TS29520\_Nnwdaf\_RoamingAnalytics.yaml  TS29520\_Nnwdaf\_RoamingData.yaml  TS29522\_AnalyticsExposure.yaml  TS29522\_MSEventExposure.yaml  TS29522\_ServiceParameter.yaml  TS29522\_TrafficInfluence.yaml  TS29565\_Ntsctsf\_QoSandTSCAssistance.yaml  TS29574\_Ndccf\_ContextManagement.yaml  TS29574\_Ndccf\_DataManagement.yaml  TS29575\_Nadrf\_DataManagement.yaml  TS29576\_Nmfaf\_3caDataManagement.yaml  TS29576\_Nmfaf\_ContextManagement.yaml  TS29583\_PIN\_ASServiceContinuity.yaml  TS29583\_PIN\_ASServiceSwitch.yaml  TS29591\_Nnef\_EventExposure.yaml  TS29591\_Nnef\_TrafficInfluenceData.yaml | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* 1st Change \*\*\*

##### 5.2.1.2.8 Type: FlowInfo

This type represents flow information. It shall comply with the provisions defined in table 5.2.1.2.8-1.

Table 5.2.1.2.8-1: Definition of the FlowInfo data type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability |
| flowId | integer | 1 | Indicates the IP flow. |  |
| flowDescriptions | array(string) | 0..2 | Indicates the packet filters of the IP flow.  Refer to clause 5.3.8 of 3GPP TS 29.214 [10] for encoding. It shall contain UL and/or DL IP flow description. |  |
| tosTC | TosTrafficClass | 0..1 | Type of service or Traffic Class. |  |
| mpxMediaUlInfos | array(mpxMediaInfo) | 0..N | Contains the Multiplexed Media Identification information for the Uplink IP flows based on the flow description. | MpxMedia |
| mpxMediaDlInfos | array(MpxMediaInfo) | 0..N | Contains the Multiplexed Media Identification Information for the Downlink IP flows based on the flow description. | MpxMedia |

NOTE: The "tosTC" attribute can be included when another packet filter attribute is needed to differentiate between packet flows. For example, packet flows encapsulated and encrypted by a tunnelling protocol can be differentiated by the ToS/TC value of the outer header if appropriately set by the application. To use ToS/TC for service data flow detection, network configuration by the operator (and additionally by the 3rd party Service Provider when the transport network is not fully within the operator control) needs to ensure there is no ToS/TC re-marking applied along the path from the application to the PSA UPF and the specific ToS/TC values are managed properly to avoid potential collision with other usage (e.g., paging policy differentiation).

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

# A.2 Data Types applicable to several APIs

For the purpose of referencing entities in the Open API file defined in this Annex, it shall be assumed that this Open API file is contained in a physical file named "TS29122\_CommonData.yaml".

NOTE: For the purpose of referencing the error status codes in the Open API file defined in this Annex, this Open API file contains all the mandatory status codes as defined in table 5.2.6-1, all the API specific error status codes defined for T8 APIs, in addition, some error status codes not used in the current release of this specification but for the purpose of referencing by other specifications.

openapi: 3.0.0

info:

title: TS 29.122 Common Data Types

version: 1.3.0

description: |

Data types applicable to several APIs.

© 2024, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

externalDocs:

description: 3GPP TS 29.122 V18.6.0 T8 reference point for Northbound APIs

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.122/'

paths: {}

components:

schemas:

SponsorInformation:

description: Represents a sponsor information.

type: object

properties:

sponsorId:

type: string

description: It indicates Sponsor ID.

aspId:

type: string

description: It indicates Application Service Provider ID.

required:

- sponsorId

- aspId

UsageThreshold:

description: Represents a usage threshold.

type: object

properties:

duration:

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

totalVolume:

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

downlinkVolume:

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

uplinkVolume:

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

UsageThresholdRm:

description: >

Represents the same as the UsageThreshold data type but with the nullable:true property.

type: object

properties:

duration:

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

totalVolume:

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

downlinkVolume:

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

uplinkVolume:

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

nullable: true

TimeWindow:

description: Represents a time window identified by a start time and a stop time.

type: object

properties:

startTime:

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

stopTime:

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

required:

- startTime

- stopTime

Acknowledgement:

description: Represents a successful acknowledgement of a notification.

type: object

properties:

details:

type: string

description: A human-readable explanation specific to this successful acknowledgement

required:

- details

NotificationData:

description: >

Represents the information to be conveyed in a bearer level event(s) notification.

type: object

properties:

transaction:

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

eventReports:

type: array

items:

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

minItems: 1

description: Contains the reported event and applicable information

required:

- transaction

- eventReports

EventReport:

description: Represents an event report.

type: object

properties:

event:

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

accumulatedUsage:

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

flowIds:

type: array

items:

type: integer

minItems: 1

description: Identifies the IP flows that were sent during event subscription

required:

- event

AccumulatedUsage:

description: Represents an accumulated usage.

type: object

properties:

duration:

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

totalVolume:

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

downlinkVolume:

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

uplinkVolume:

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

FlowInfo:

description: Represents IP flow information.

type: object

properties:

flowId:

type: integer

description: Indicates the IP flow identifier.

flowDescriptions:

type: array

items:

type: string

description: >

Indicates the packet filters of the IP flow. Refer to clause 5.3.8 of 3GPP TS 29.214 for

encoding. It shall contain UL and/or DL IP flow description.

minItems: 1

maxItems: 2

tosTC:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/TosTrafficClass'

mpxMediaUlInfos:

type: array

items:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/MpxMediaInfo'

minItems: 1

description: >

contains the multiplexed media identification infromation for Uplink IP flow.

mpxMediaDlInfos:

type: array

items:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/MpxMediaInfo'

minItems: 1

description: >

contains the multiplexed media identification infromation for Downlink IP flow.

required:

- flowId

TestNotification:

description: >

Represents a notification that can be sent to test whether a chosen notification mechanism

works.

type: object

properties:

subscription:

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

required:

- subscription

WebsockNotifConfig:

description: >

Represents the configuration information for the delivery of notifications over Websockets.

type: object

properties:

websocketUri:

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

requestWebsocketUri:

type: boolean

description: Set by the SCS/AS to indicate that the Websocket delivery is requested.

LocationArea:

description: Represents a user location area.

type: object

properties:

cellIds:

type: array

items:

type: string

minItems: 1

description: >

Indicates a list of Cell Global Identities of the user which identifies the cell the UE

is registered.

enodeBIds:

type: array

items:

type: string

minItems: 1

description: Indicates a list of eNodeB identities in which the UE is currently located.

routingAreaIds:

type: array

items:

type: string

minItems: 1

description: >

Identifies a list of Routing Area Identities of the user where the UE is located.

trackingAreaIds:

type: array

items:

type: string

minItems: 1

description: >

Identifies a list of Tracking Area Identities of the user where the UE is located.

geographicAreas:

type: array

items:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

minItems: 1

description: Identifies a list of geographic area of the user where the UE is located.

civicAddresses:

type: array

items:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

minItems: 1

description: Identifies a list of civic addresses of the user where the UE is located.

LocationArea5G:

description: Represents a user location area when the UE is attached to 5G.

type: object

properties:

geographicAreas:

type: array

items:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

minItems: 0

description: Identifies a list of geographic area of the user where the UE is located.

civicAddresses:

type: array

items:

$ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

minItems: 0

description: Identifies a list of civic addresses of the user where the UE is located.

nwAreaInfo:

$ref: 'TS29554\_Npcf\_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'

ProblemDetails:

description: Represents additional information and details on an error response.

type: object

properties:

type:

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

title:

type: string

description: >

A short, human-readable summary of the problem type. It should not change from occurrence

to occurrence of the problem.

status:

type: integer

description: The HTTP status code for this occurrence of the problem.

detail:

type: string

description: A human-readable explanation specific to this occurrence of the problem.

instance:

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

cause:

type: string

description: >

A machine-readable application error cause specific to this occurrence of the problem.

This IE should be present and provide application-related error information, if

available.

invalidParams:

type: array

items:

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

minItems: 1

description: >

Description of invalid parameters, for a request rejected due to invalid parameters.

supportedFeatures:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

InvalidParam:

description: >

Represents the description of invalid parameters, for a request rejected due to invalid

parameters.

type: object

properties:

param:

type: string

description: Attribute's name encoded as a JSON Pointer, or header's name.

reason:

type: string

description: A human-readable reason, e.g. "must be a positive integer".

required:

- param

PlmnId:

description: Represents the identifier of a PLMN.

type: object

properties:

mcc:

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

mnc:

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

required:

- mcc

- mnc

ConfigResult:

description: Represents one configuration processing result for a group's members.

type: object

properties:

externalIds:

type: array

items:

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

minItems: 1

description: Each element indicates an external identifier of the UE.

msisdns:

type: array

items:

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

minItems: 1

description: >

Each element identifies the MS internal PSTN/ISDN number allocated for the UE.

resultReason:

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

required:

- resultReason

oneOf:

- required: [externalIds]

- required: [msisdns]

Bandwidth:

type: integer

minimum: 0

description: integer indicating a bandwidth in bits per second.

BdtReferenceId:

type: string

description: string identifying a BDT Reference ID as defined in clause 5.3.3 of 3GPP TS 29.154.

Binary:

type: string

description: string with format "binary" as defined in OpenAPI Specification.

Bytes:

type: string

description: >

String with format "byte" as defined in OpenAPI Specification, i.e, base64-encoded

characters.

DayOfWeek:

type: integer

minimum: 1

maximum: 7

description: >

integer between and including 1 and 7 denoting a weekday. 1 shall indicate Monday, and the

subsequent weekdays shall be indicated with the next higher numbers. 7 shall indicate

Sunday.

DateTime:

format: date-time

type: string

description: string with format "date-time" as defined in OpenAPI.

DateTimeRm:

format: date-time

type: string

description: >

string with format "date-time" as defined in OpenAPI with "nullable=true" property.

nullable: true

DateTimeRo:

format: date-time

type: string

description: >

string with format "date-time" as defined in OpenAPI with "readOnly=true" property.

readOnly: true

DurationSec:

type: integer

minimum: 0

description: Unsigned integer identifying a period of time in units of seconds.

DurationSecRm:

type: integer

minimum: 0

description: >

Unsigned integer identifying a period of time in units of seconds with "nullable=true"

property.

nullable: true

DurationSecRo:

type: integer

minimum: 0

description: >

Unsigned integer identifying a period of time in units of seconds with "readOnly=true"

property.

readOnly: true

DurationMin:

type: integer

format: int32

minimum: 0

description: Unsigned integer identifying a period of time in units of minutes.

ExternalId:

type: string

description: >

string containing a local identifier followed by "@" and a domain identifier. Both the local

identifier and the domain identifier shall be encoded as strings that do not contain any "@"

characters. See Clause 4.6.2 of 3GPP TS 23.682 for more information.

ExternalGroupId:

type: string

description: >

string containing a local identifier followed by "@" and a domain identifier. Both the local

identifier and the domain identifier shall be encoded as strings that do not contain any "@"

characters. See Clauses 4.6.2 and 4.6.3 of 3GPP TS 23.682 for more information.

Ipv4Addr:

type: string

description: >

string identifying a Ipv4 address formatted in the "dotted decimal" notation as defined in

IETF RFC 1166.

Ipv6Addr:

type: string

description: >

string identifying a Ipv6 address formatted according to clause 4 in IETF RFC 5952.

The mixed Ipv4 Ipv6 notation according to clause 5 of IETF RFC 5952 shall not be used.

Ipv4AddrRo:

type: string

description: >

string identifying a Ipv4 address formatted in the "dotted decimal" notation

as defined in IETF RFC 1166, with "readOnly=true" property.

readOnly: true

Ipv6AddrRo:

type: string

description: >

string identifying a Ipv6 address formatted according to clause 4 in IETF RFC 5952,

with "readOnly=true" property. The mixed Ipv4 Ipv6 notation according to clause 5 of

IETF RFC 5952 shall not be used.

readOnly: true

Link:

type: string

description: string formatted according to IETF RFC 3986 identifying a referenced resource.

LinkRm:

type: string

description: >

String formatted according to IETF RFC 3986 identifying a referenced resource,

but with the nullable property set to true.

nullable: true

Mcc:

type: string

description: >

String encoding a Mobile Country Code part of the PLMN, comprising 3 digits,

as defined in 3GPP TS 38.413.

Mnc:

type: string

description: >

String encoding a Mobile Network Code part of the PLMN, comprising 2 or 3 digits,

as defined in 3GPP TS 38.413.

Msisdn:

type: string

description: >

string formatted according to clause 3.3 of 3GPP TS 23.003 that describes an MSISDN.

Port:

type: integer

description: Unsigned integer with valid values between 0 and 65535.

minimum: 0

maximum: 65535

PortRo:

type: integer

description: >

Unsigned integer with valid values between 0 and 65535, with "readOnly=true" property.

minimum: 0

maximum: 65535

readOnly: true

ResourceId:

type: string

description: string chosen by the SCEF to serve as identifier in a resource URI.

ScsAsId:

type: string

description: string that identifies an SCS/AS.

TimeOfDay:

type: string

description: >

String with format partial-time or full-time as defined in clause 5.6 of IETF RFC 3339.

Examples, 20:15:00, 20:15:00-08:00 (for 8 hours behind UTC).

Uri:

type: string

description: string providing an URI formatted according to IETF RFC 3986.

Volume:

type: integer

format: int64

minimum: 0

description: Unsigned integer identifying a volume in units of bytes.

VolumeRm:

type: integer

format: int64

minimum: 0

description: >

Unsigned integer identifying a volume in units of bytes with "nullable=true" property.

nullable: true

EthFlowInfo:

description: Represents Ethernet flow information.

type: object

properties:

flowId:

type: integer

description: Indicates the Ethernet flow identifier.

ethFlowDescriptions:

type: array

items:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

description: >

Indicates the packet filters of the Ethernet flow. It shall contain UL and/or DL

Ethernet flow description.

minItems: 1

maxItems: 2

required:

- flowId

Event:

anyOf:

- type: string

enum:

- SESSION\_TERMINATION

- LOSS\_OF\_BEARER

- RECOVERY\_OF\_BEARER

- RELEASE\_OF\_BEARER

- USAGE\_REPORT

- FAILED\_RESOURCES\_ALLOCATION

- SUCCESSFUL\_RESOURCES\_ALLOCATION

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration and is not used to encode

content defined in the present version of this API.

description: |

Represents the event reported by the SCEF.

Possible values are:

- SESSION\_TERMINATION: Indicates that Rx session is terminated.

- LOSS\_OF\_BEARER : Indicates a loss of a bearer.

- RECOVERY\_OF\_BEARER: Indicates a recovery of a bearer.

- RELEASE\_OF\_BEARER: Indicates a release of a bearer.

- USAGE\_REPORT: Indicates the usage report event.

- FAILED\_RESOURCES\_ALLOCATION: Indicates the resource allocation is failed.

- SUCCESSFUL\_RESOURCES\_ALLOCATION: Indicates the resource allocation is successful.

ResultReason:

anyOf:

- type: string

enum:

- ROAMING\_NOT\_ALLOWED

- OTHER\_REASON

- type: string

description: >

This string provides forward-compatibility with future extensions to the enumeration

and is not used to encode content defined in the present version of this API.

description: |

Represents a failure result reason.

Possible values are:

- ROAMING\_NOT\_ALLOWED: Identifies the configuration parameters are not allowed by roaming

agreement.

- OTHER\_REASON: Identifies the configuration parameters are not configured due to other

reason.

#

# HTTP responses

#

responses:

'307':

description: Temporary Redirect

headers:

Location:

description: 'An alternative URI of the resource.'

required: true

schema:

type: string

'308':

description: Permanent Redirect

headers:

Location:

description: 'An alternative URI of the resource.'

required: true

schema:

type: string

'400':

description: Bad request

content:

application/problem+json:

schema:

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

'401':

description: Unauthorized

content:

application/problem+json:

schema:

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

'403':

description: Forbidden

content:

application/problem+json:

schema:

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

'404':

description: Not Found

content:

application/problem+json:

schema:

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

'406':

description: Not Acceptable

content:

application/problem+json:

schema:

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

'409':

description: Conflict

content:

application/problem+json:

schema:

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

'411':

description: Length Required

content:

application/problem+json:

schema:

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

'412':

description: Precondition Failed

content:

application/problem+json:

schema:

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

'413':

description: Content Too Large

content:

application/problem+json:

schema:

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

'414':

description: URI Too Long

content:

application/problem+json:

schema:

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

'415':

description: Unsupported Media Type

content:

application/problem+json:

schema:

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

'429':

description: Too Many Requests

content:

application/problem+json:

schema:

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

'500':

description: Internal Server Error

content:

application/problem+json:

schema:

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

'503':

description: Service Unavailable

content:

application/problem+json:

schema:

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

default:

description: Generic Error

\*\*\* End of Changes \*\*\*