**3GPP TSG- Meeting #S5-242051**

**Changsha, CN,15**th **– Revision of S5-241542**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0221** | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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 | **X** | Core Network | **X** |

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| ***Title:*** | Rel-18 CR TS 28.312 correction of attribute definition | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson LG Co | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IDMS\_MN\_ph2 | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | |  |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | According to TS 28.300 a Distinguished Name (DN) is used to uniquely identify a MO within a name space. In TS 28.312 this rule is not followed.  According to TS 32.156 If the property is present for attributes with a multiplicity of greater than “1”, isOrdered shall be set to either “True” or “False”. It shall not be set to “N/A”. | | | | | | | | |
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| ***Summary of change:*** | | Correct Attribute property "isUnique" and “isOrdered” in the document when the attribute Type is DN and multiplicity>1. Remove extra space. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incorrect attribute property remains in the document. | | | | | | | | |
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| ***Clauses affected:*** | | 6.2.1.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

***First change***

#### 6.2.1.4 Attribute definition

Table 6.2.1.4-1

| Attribute Name | Documentation and Allowed Values | Properties |
| --- | --- | --- |
| userLabel | A user-friendly (and user assignable) name of the intent.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| intentExpectations | It describes the expectations including requirements, goals and contexts (including constraints and filter information) given to a 3GPP system. It states the list of specific outcomes desired to be realized for expectation object(s).  The intentExpectations are arranged in an ordered list such that the most important intentExpectations are on the top of the list.  allowedValues: Not Applicable | type: IntentExpectation  multiplicity: 1..\*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: False |
| intentFulfilmentInfo | It describes status of fulfilment of an intent and the related reasons for that status.  allowedValues: Not Applicable | type: FulfilmentInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| expectationFulfilmentInfo | It describes status of fulfilment of an intentExpectation and the related reasons for that status.  allowedValues: Not Applicable | type: FulfilmentInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| targetFulfilmentInfo | It describes status of fulfilment of an expectationTarget and the related reasons for that status.  allowedValues: Not Applicable | type: FulfilmentInfo  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| fulfilmentStatus | It describes the current status of the fulfilment result for intent, intentExpectation or expectationTarget, which is configured by MnS producer and can be read by MnS consumer.  allowedValues: "FULFILLED", "NOT\_FULFILLED" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| notFulfilledState | It describes the current state for not achieving fulfilment for the intent, intentExpectation or expectationTarget. It is configured/written by MnS producer and can be read by MnS consumer.  allowedValues: "ACKNOWLEDGED", "COMPLIANT", "DEGRADED", "SUSPENDED", "TERMINATED" "FULFILMENTFAILED" | type: ENUM  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| notFulfilledReasons | It describes the reasons/observations related to the specific notFulfilledState  allowedValues: Not Applicable | type: String  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| intentContexts | It describes the list of IntentContext(s) which represents the constraints and conditions that should apply for the entire intent even if there may be specific contexts defined for specific parts of the intent.  allowedValues: triple of (attribute, condition, value range) | type: Context  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| expectationId | A unique identifier of the intentExpectation within the intent.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| expectationVerb | It describes the characteristic of the intentExpectation and is the property that describes the types of intentExpectations.  Examples of verbs and their related types of expectation are  Deliver: DeliveryIntentExpectation, e.g. Deliver a RAN network, Service, Slice, function  Ensure: AssuranceintentExpectation, e.g. Ensure the target performance value.  allowedValues: DELIVER, ENSURE  Vendor extensions are allowed | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| expectationObject | It describes the expectation objects to which the IntentExpectation should apply.  allowedValues: Not Applicable | type: ExpectationObject  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| objectType | It describes the type of expectation object of the IntentExpectation that is required to be applied to. It can be class name of the managed object.  allowedValues: see scenario specific IntentExpectation | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| objectInstance | It describes a specific object instance (e.g. instance of managed object) to which the intentExpectation should apply.  allowedValues: Not Applicable | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| objectContexts | It describes the list of ObjectContext(s) which represents the constraints and conditions to be used as filter information to identify the object(s) to which a given intentExpectation should apply. Note there may be other constraints and conditions defined either for the entire intent, for the specific intentExpectation or for the expectationTarget of the considered intentExpectation.  The concrete ObjectContext depends on the ExpectationObject, which is defined in clause 6.2.2. All the concrete ObjectContexts follow the common structure of ObjectContext. | type: Context  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| expectationTargets | It describes the list of ExpectationTarget(s) which represent specific outcomes on the metrics that characterize the performance of the object(s) or some abstract index that expresses the behavior of the object(s) that are desired to be realized for a given intentExpectation.  The concrete ExpectationTarget depends on the ExpectationObject, which is defined in clause 6.2.2. All the concrete ExpectationTargets follow the common structure of ExpectationTarget.  The expectionTargets are arranged in an ordered list such that the most important expectionTargets are on the top of the list. | type: ExpectationTarget  multiplicity: 1..\*  isOrdered: True  isUnique: True  defaultValue: None  isNullable: False |
| expectationContexts | It describes the list of context(s) which represents the constraints and conditions that should apply for a specific intentExpectation.  Note there may be other constraints and conditions defined for the entire intent or for specific parts of the intentExpectation.  allowedValues: depends on Expectation Object in the IntentExpectation | type: Context  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| targetName | It describes the name of the expectation target which represents specific outcomes on the metrics that characterize the performance of the object(s) or some abstract index that expresses the behavior of the object(s) that are desired to be realized for a given intentExpectation.  allowedValues: depends on ExpectationObject in the IntentExpectation | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| targetCondition | It expresses the limits within which the targetName is allowed/supposed to be.  allowedValues: "IS\_EQUAL\_TO", "IS\_LESS\_THAN", "IS\_GREATER\_THAN", "IS\_WITHIN\_RANGE", "IS\_OUTSIDE\_RANGE", "IS\_ONE\_OF", " IS\_EQUAL\_TO\_OR\_LESS\_THAN”, "IS\_EQUAL\_TO\_OR\_GREATER\_THAN", "IS\_NOT\_ONE\_OF", "IS\_ALL\_OF" | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "IS\_EQUAL\_TO"  isNullable: False |
| targetValueRange | It describes the range of values that applicable to the targetName and the targetCondition.  allowedValues: depends on the targetCondition.  The value will be a single value when the targetCondition is either "IS\_EQUAL\_TO", "IS\_LESS\_THAN", "IS\_GREATER\_THAN", "IS EQUAL TO OR LESS THAN", "IS EQUAL TO OR GREATER THAN”  The value will be a pair of values when the targetCondition is either "IS\_WITHIN\_RANGE", "IS\_OUTSIDE\_RANGE"  The value will be a list when the targetCondition is "IS\_ONE\_OF", "IS\_NOT\_ONE\_OF","IS\_ALL\_OF". See NOTE 1. | type: ValueRangeType  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: True |
| targetContexts | It describes the list of constraints and conditions that should apply for a specific expectationTarget. Note there may be other constraints and conditions defined for the entire intent or the intentExpectation.  allowedValues: Not Applicable | type: Context  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| contextAttribute | It describes a specific attribute of or related to the object or to characteristics thereof (e.g. its control parameter, gauge, counter, KPI, weighted metric, etc) to which the expectation should apply or an attribute related to the operating conditions of the object (such as weather conditions, load conditions, etc). | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| contextCondition | It expresses the limits within which the ContextAttribute is allowed/supposed to be  allowedValues: "IS\_EQUAL\_TO", "IS\_LESS\_THAN", "IS\_GREATER\_THAN", "IS\_WITHIN\_RANGE", "IS\_OUTSIDE\_RANGE, "IS\_ONE\_OF", "IS\_EQUAL\_TO\_OR LESS\_THAN", "IS\_EQUAL\_TO\_OR\_GREATER\_THAN", "IS\_NOT\_ONE\_OF","IS\_ALL\_OF" | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "IS\_EQUAL\_TO"  isNullable: False |
| contextValueRange | It describes the range of values that applicable to the ContextAttribute and the ContextCondition.  AllowedValue: depends on the contextCondition  The value will be a single value when the contextCondition is either "IS\_EQUAL\_TO", "IS\_LESS\_THAN", "IS\_GREATER\_THAN", "IS\_EQUAL\_TO\_OR\_LESS\_THAN", "IS\_EQUAL\_TO\_OR\_GREATER\_THAN".  The value will be a pair of values when the contextCondition is either "IS\_WITHIN\_RANGE", "IS\_OUTSIDE\_RANGE"  The value will be a list when the contextCondition is "IS\_ONE\_OF", "IS\_NOT\_ONE\_OF","IS\_ALL\_OF".  See NOTE 1. | type: ValueRangeType  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: True |
| intentPriority | It expresses the priority of the stated intent within an MnS consumer.  AllowedValue: values in the range [1-100] where 1 indicates the highest priority and 100 indicates the lowest priority.  NOTE: The handing of the priorities across MnS consumers is left to implementation | type: integer  multiplicity: 1  isOrdered: False  isUnique: True  defaultValue: 1  isNullable: False |
| geoArea | It describes a geographical area defined in 3GPP TS 28.622[6].  AllowedValue: As defined by the data type | type: GeoArea  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| pLMNId | It describes the information of a PLMN identification defined in 3GPP 28.658[10]  AllowedValue: As defined by the data type | type: PLMNId  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| dateTime | It describes the information of a date time defined in 3GPP TS 28.622[6].  AllowedValue: As defined by the data type | type: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| timeWindow | It describes the information of a time window (including startTime, endTime) defined in 3GPP TS 28.622[6].  AllowedValue: As defined by the data type | type: TimeWindow  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| geoCoordinate | It describes the information of a geoCoordinate defined in 3GPP TS 28.622[6].  AllowedValue: As defined by the data type | type: GeoCoordinate  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| frequency | It desribes the RF reference frequency (i.e. Absolute Radio Frequency Channel Number) and/or the frequency operating band used for a given direction (UL or DL) in FDD or for both UL and DL directions in TDD.  AllowedValue: As defined by the data type | type: Frequency  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| arfcn | It desribes the RF reference frequency (i.e. Absolute Radio Frequency Channel Number).  Allowed Value:  For NR, see TS 38.104 [8] clause 5.4.2.1.  For EUTRAN, see TS 36.104 [14] clause 5.7.3. | type: Integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| freqband | It desribes the the frequency operating band.  Allowed Value:  For NR, see TS 38.104 [8] clause 5.4.2.3.  For EUTRAN, see TS 36.104 [14] clause 5.7.3. | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| uEGroup | It describes the information of a UE Group (represented by specific 5QI, specific S-NSSAI, or a specific combination of S-NSSAI and 5QI).  AllowedValue: As defined by the data type | type: UEGroup  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| fiveQI | It describes the information of a 5QI defined in 3GPP TS 28.541[5].  AllowedValue: 0 - 255 | type: integer  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| sNSSAI | It describes the information of a S-NSSAI defined in 3GPP TS 28.541[5].  AllowedValue: As defined by the data type | type: S-NSSAI  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: True |
| intentAdminState | It describes the intent administrative state, which enables the MnS consumer to suspend an intent or cancel the suspension for a suspended intent. A suspended intent means this intent is not considered for fulfilment  allowedValues: "ACTIVATED", "DEACTIVATED" | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "ACTIVATED"  isNullable: False |
| intentReference | It indicates the associated intent instance  allowedValues: Not Applicable | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| intentReportReference | It indicates the associated intent report instance(s)  allowedValues: Not Applicable | type: DN  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| observationPeriod | It represents the observation period of the fulfilmentInfo for corresponding ExpectationTargets, IntentExpectations and Intent. At the end of the observation period, the corresponding fulfilment info is updated in the intent report. The observation period can be assigned by MnS consumer through requesting the MnS producer to set attribute "observationPeriod". MnS producer also can assign the observation period if MnS consumer didn’t assign it.  The observation time is expressed in seconds.  allowedValues: Not Applicable | type: Integer  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| intentFulfilmentReport | It describes the fulfillment information which is reported for the associated intent instance.  allowedValues: Not Applicable | type: IntentFulfilmentReport  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| intentConflictReports | It describes the conflict information which is reported for associated intent instance if needed.  allowedValues: Not Applicable | type: IntentConflictReport  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| conflictId | It is used to identify the detected conflict within an IntentReport instance.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| conflictType | It describes the type of intent conflict.  allowedValues: INTENT\_CONFLICT, EXPECTATION\_CONFLICT, TARGET\_CONFLICT | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| conflictingIntent | It describes the DN of the conflicting intent  allowedValues: Not Applicable | type: DN  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| conflictingExpectation | It describes the expectationId of the conflicting IntentExpectation within an Intent.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| conflictingTarget | It describes the targetName of the conflicting ExpectationTarget within an IntentExpectation.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| recommendedSolutions | It describes the action recommended by the MnS producer to be undertaken by the MnS consumer to resolve intent conflict. The recommended solution applies only for the specific intent whose intent report contains this attribute.  allowedValues: "MODIFY", "DELETE" | type: ENUM  multiplicity: 1  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| expectationFulfilmentResults | It includes the expectationFulfilmentInfo and targetFulfilmentResults for each IntentExpectation. The expectationFulfilmentInfo describes status of fulfilment of an intentExpectation and the related reasons for infeasible status.  allowedValues: Not Applicable | type: ExpectationFulfilmentResult  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| targetFulfilmentResults | It includes targetFulfilmentInfo and targetAchievedValue for each ExpectationTarget. The targetFulfilmentInfo describes status of fulfilment of an expectationTarget and the related reasons for infeasible status. The targetAchieveValue describes current performance value for the ExpectationTarget.  allowedValues: Not Applicable | type: TargetFulfilmentResult  multiplicity: \*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| targetAchievedValue | It describes the value that has been achieved for the expectation target at the time at which the report is generated.  allowedValues: Not Applicable | type: Number  multiplicity: 0..1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| intentFeasibilityCheckReport | It describes the intent feasibility check information which is reported if needed.  allowedValues: Not Applicable | type: IntentFeasibilityCheckReport  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| feasibilityCheckResult | It describes the result of intent fulfilment feasibility check  allowedValues: FEASIBLE, INFEASIBLE | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| infeasibilityReasons | It describes the reason (e.g. invalid intent expression, the intent conflict) of the result of intent fulfilment feasibility check is INFEASIBLE  Editor’s Note: the ENUM value for infeasibilityReason is FFS. | type: ENUM  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| intentHandlingCapabilityList | It describes the list of expectation object information and expectation target information which can be supported by intent handling function.  allowedValues: Not Applicable | type: IntentHandlingCapability  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| intentHandlingCapabilityId | A unique identifier of property of intent handling capability should be supported by the intent handling function of MnS producer.  allowedValues: Not Applicable | type: String  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedExpectationObjectType | It describes the expectation object type which can be supported by a specific intent handling function of MnS producer.  allowedValues: objectType defined in clause 6.2.1.3.2. | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| supportedExpectationTargetNames | It describes the supported expectation targets for the supported expectation object type.  allowedValues: targetName defined in clause 6.2.1.3.3 | type: String  multiplicity: 1..\*  isOrdered: False  isUnique: True  defaultValue: None  isNullable: False |
| lastUpdatedTime | It describes the time for the latest update of the IntentReport Instance. | type: DateTime  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: None  isNullable: False |
| ContextSelectivity | It expresses the may in which all or a subset of the expectationTargets may be applied.  AllowedValue: "ALL\_OF", "ONE\_OF", "ANY\_OF" | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "ALL\_OF"  isNullable: False |
| intentPreemptionCapability | It describes the pre-emption capability. The attribute is used by MnS producer to decide the target of intent deletion or intent modification  AllowedValue: TRUE, FALSE | type: Enum  multiplicity: 1  isOrdered: N/A  isUnique: N/A  defaultValue: "FALSE"  isNullable: False |
| NOTE: For "IS\_ALL\_OF", the value shall be a match of the entire list. | | |

***End of changes***