# Impact Analysis Report/ RFC-Proposal

**Section 1: Meta-data**

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| **RFC ID** | **RFC\_NCTS\_0169**(RTC-58676) |
| **Related Incident ID** | IM469192, IM458718 |
| **RFC Initiator / Organization** | NA-ES |
| **CI** | **NCTS-P5 (DDNTA-v5.14.1-v1.00 – CSE-v51.6.0)** |
| **Type of Change** | **Standard** **Emergency** |
| **Nature of Change** | Justification for Evolutive   |  | | --- | | Apply DDCOM restrictions for numerical fields in DDNXA Appendix X | |
| **RFC Source** | |  |  | | --- | --- | | **Legal & Policy Change**  **Organisational Changes** | **Business Change**  **IT Change** | |
| **Review by Business User recommended?** | **Yes No** |

***Change Summary***

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| **DDNΤA Appendix X 5.14.0-v1.00** - Restrict the pattern of <xs:decimal> data items according to DDCOM 20.3.0-v1.00 "V.2.1.1.1 Numerical fields" |
| **DDNTA 5.14.0-v1.00 Appendix X** (XSD)specifications need to be reviewed in order to follow the DDCOM 20.3.0-v1.00 specifications for numerical fields (section “V.2.1.1.1 Numerical fields”). More specifically, numerical data items should not allow the use of “+”and “-“ characters. |

**Section 2: Problem statement**

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| In DDCOM 20.3.0-v1.00 the section “V.2.1.1.1 Numerical fields” depicts the principles for the structure and allowed values for the numerical fields in Customs systems:      Figure 1: DDCOM V.2.1.1.1 – Numerical principles    Figure 2: DDCOM V.2.1.1.1 – Numerical principles (2)    Figure 3: DDCOM V.2.1.1.1 – Numerical principles (Related footnotes)  DDCOM principles should be followed by all NAs. The above principles are common since DDCOM v15.00 (which is the baseline for the legacy systems NCTS-P4/ECS-P2).  In DDNTA for NCTS-P5, in Appendix X (XSDs), there are two base types which are used on the numerical fields. More specifically:   * "DecType": Base class for all n..N,M types. With restriction "xs:decimal", which practically means that it is used for decimal values. * "NumType": Base class for all nN and n..N types. With restriction "xs:token" (which is analyzed under RTC-55494)   Generally, both "xs:token" and "xs:decimal", permit values '+' and '-' on the beginning, and XSD-wise, such values are valid during a syntax validation. However, please note that if restrictions are in place (eg pattern), these overrules the above.  The following examples show the aforementioned cases for better clarification:  EXAMPLE 1  The grossMass on the CD001C message is based on the following simple type  <xs:simpleType name="GrossMassContentType">  <xs:restriction base="xs:decimal">  <xs:totalDigits value="16" />  <xs:fractionDigits value="6" />  </xs:restriction>  </xs:simpleType>  - The value '-476.00' on the '/CD001C/Consignment/grossMass' is considered valid.  - The value '+123456789101113.1' on the '/CD001C/Consignment/grossMass' is considered valid.  - The value '+123456789101113.11' on the '/CD001C/Consignment/grossMass' is considered invalid because the totalDigits (max 16) was violated.  EXAMPLE 2  The sequence number of the "/CD001C/Consignment/HouseConsignment/ConsignmentItem/SupportingDocument/sequenceNumber" is based on the following simple type  <xs:simpleType name="SequenceNumberContentType">  <xs:restriction base="xs:token">  <xs:pattern value="[0-9]{1,5}" />  </xs:restriction>  </xs:simpleType>  - The value '-1' is considered invalid, because the pattern is violated  Furthermore, it should be noted that there is not a simple type which is based on the "xs:token" and does not include a pattern restriction. That practically means that the non decimal types are covered on the XSD level and they are inline with the DDCOM statement that plus or minus signs are not allowed (please refer to V.2.1.1.1 Numerical fields).  Please note that the restriction base for all non decimal numerical items will be updated to xs:integer. (see RTC-51543)  Following the above, pattern restrictions should be applied on XSD level for decimal types in order to align them with the DDCOM guidelines. Having also in mind that value ‘0’ is not a valid decimal value, but also applicable for some of them, an extra pattern needs to be introduced for such cases. The following table contains all data items which are based on <xs:decimal>.   |  |  |  | | --- | --- | --- | | Data Item | Format | simpleType | | AmountClaimed | n..16,2 | AmountClaimedContentType | | AmountConcerned | n..16,2 | AmountConcernedContentType | | AmountToBeCovered | n..16,2 | AmountToBeCoveredContentType | | Balance | n..16,2 | BalanceContentType | | CoveredAmount | n..16,2 | CoveredAmountContentType | | Exposure | n..16,2 | ExposureContentType | | GrossMass | n..16,6 | GrossMassContentType | | GuaranteeAmount | n..16,2 | GuaranteeAmountContentType | | NetMass | n..16,6 | NetMassContentType | | Quantity | n..16,6 | QuantityContentType | | ReferenceAmount | n..16,2 | ReferenceAmountContentType | | SupplementaryUnits | n..16,6 | SupplementaryUnitsContentType | | VoucherAmount | n..16,2 | VoucherAmountContentType |   Table 1: NCTS Data Items which are based on <xs:decimal>  The assignment of the proper pattern is depended on the RTC-51543, on which the applicability of value ‘0’ is analyzed per message and data item.  Following the above mentioned RTC, we are planning to introduce new xsd simple types for each identified category which should respect both the format (e.g total and fraction digits) of the decimal numeric fields and the applicability of value ‘0’. These are the following:   |  |  |  | | --- | --- | --- | | SimpleType | Format | Description | | DecimalWithZero\_16\_2 | n..16,2 | Simple type that should be applied on decimal types with format n..16,2 and with pattern that will allow value ‘0’ | | DecimalWithoutZero\_16\_2 | n..16,2 | Simple type that should be applied on decimal types with format n..16,2 and with pattern that will not allow value ‘0’ | | DecimalWithZero\_16\_6 | n..16,6 | Simple type that should be applied on decimal types with format n..16,6 and with pattern that will allow value ‘0’ | | DecimalWithoutZero\_16\_6 | n..16,6 | Simple type that should be applied on decimal types with format n..16,6 and with pattern that will not allow value ‘0’ |   Table 2: NCTS new simple types with description  Finally, the guideline G0002 should be attached to all data items, which will be affected as part of this IAR. This guideline states the following |

**Section 3: Description of proposed solution**

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| The next release of **DDNTA specifications** is going to be updated with the addition of the turquoise text that follows:  The following patterns will be used, which are equivalent of the proposed ones:    <xs:simpleType name="DecimalWithoutZero\_16\_2">  <xs:restriction base="xs:decimal">  <xs:totalDigits value="16" />  <xs:fractionDigits value="2" />  <xs:pattern value="[1-9]\d\*(\.\d+)?"/>  <xs:pattern value="0\.\d\*[1-9]\d\*"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="DecimalWithoutZero\_16\_6">  <xs:restriction base="xs:decimal">  <xs:totalDigits value="16" />  <xs:fractionDigits value="6" />  <xs:pattern value="[1-9]\d\*(\.\d+)?"/>  <xs:pattern value="0\.\d\*[1-9]\d\*"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="DecimalWithZero\_16\_2">  <xs:restriction base="xs:decimal">  <xs:totalDigits value="16" />  <xs:fractionDigits value="2" />  <xs:pattern value="(0|[1-9]\d\*)(\.\d+)?"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="DecimalWithZero\_16\_6">  <xs:restriction base="xs:decimal">  <xs:totalDigits value="16" />  <xs:fractionDigits value="6" />  <xs:pattern value="(0|[1-9]\d\*)(\.\d+)?"/>  </xs:restriction>  </xs:simpleType>  Given that the applicability of the above simple types may vary per message and data item, please find below a detailed table with the affected entities. The below listed simple types will replace the current ones.   |  |  |  |  | | --- | --- | --- | --- | | Data Item | IEs | DI | simpleType | | CoveredAmount | CC037C | MESSAGE - GUARANTEE REFERENCE - USAGE.Covered amount | DecimalWithoutZero\_16\_2 | | GrossMass | CC043C | MESSAGE - CONSIGNMENT.Gross mass | DecimalWithoutZero\_16\_6 | | GrossMass | CC013C,  CC015C,  CD001C,  CD003C,  CD012C,  CD038C,  CD050C,  CD115C,  CD160C,  CD165C | MESSAGE - CONSIGNMENT.Gross mass | DecimalWithoutZero\_16\_6 | | GrossMass | CC029C | MESSAGE - CONSIGNMENT.Gross mass | DecimalWithoutZero\_16\_6 | | GrossMass | CC017C,  CC044C,  CD018C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT.Gross mass | DecimalWithoutZero\_16\_6 | | GrossMass | CC013C,  CC015C,  CC029C,  CC043C,  CD001C,  CD003C,  CD012C,  CD038C,  CD050C,  CD115C,  CD160C,  CD165C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT.Gross mass | DecimalWithoutZero\_16\_6 | | GuaranteeAmount | CC228C | MESSAGE - GUARANTEE REFERENCE.Guarantee amount | DecimalWithZero\_16\_2 | | NetMass | CC029C, CC043C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CC013C, CC015C, CD001C, CD003C, CD038C, CD050C, CD115C, CD160C, CD165C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CD012C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CC017C, CC044C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CD018C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CC025C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | NetMass | CC190C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Net mass | DecimalWithZero\_16\_6 | | Quantity | CC013C,  CC015C,  CC029C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - PREVIOUS DOCUMENT.Quantity | DecimalWithoutZero\_16\_6 | | SupplementaryUnits | CC190C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Supplementary units | DecimalWithoutZero\_16\_6 | | SupplementaryUnits | CC013C, CC015C | MESSAGE - CONSIGNMENT - HOUSE CONSIGNMENT - CONSIGNMENT ITEM - COMMODITY - GOODS MEASURE.Supplementary units | DecimalWithoutZero\_16\_6 | | Document line item number |  | CONSIGNMENT.SUPPORTING DOCUMENT.Document line item number |  |   Table 3: NCTS, simple types applicability per message  Finally, the guideline G0002 will be attached to all affected data items, which are listed on Table 3.  More specifically, it will be applied in the data items that neither G0002, G0005, G0021, G0321, R0054, R0055, R0987, R0988 are applied nor have any codelists attached.  For the exhaustive list of the Data Items that G0002 will be applied to, please refer to the **RFC\_NCTS\_0122\_CUSTDEV3-IAR-RTC51543-v1.10(SfA-IMP)**  **Impacted CIs**:   * **DDNTA-5.14.0-v1.00: (only Appendix X): Yes;** * **CTS-5.6.1-v1.00: Yes;** * **TRP-5.7.5-v1.00: Yes;** * **CRP-5.5.0-v1.00: Yes;** * CSE-v51.6.0: No; * DMP Package-5.6.0 v1.00: (incl. update of file Rules and Conditions\_v0.41): No; * CTP-5.7.0-v1.00: No; * ACS: 5.4.0-v1.00 & ACS-Annex-AES/NCTS: 5.5.0-v1.00: No; * DDCOM 20.3.0-v1.00: No; * ieCA 1.0.2.1: No; * CS/MIS2\_DATA: No; * CS/RD2\_DATA: No; * AES-P1 and NCTS-P5 Long-Lived “Legacy” (L3) Movements Study v1.40: No;   **IMPACT ASSESSMENT:**  This RFC-Proposal concerns changes at syntactic level in all (Common and External Domain) messages.    It is considered that the change proposed via the current IAR has not impact on business continuity, since it transfers the principles of DDCOM 20.3.0-v1.00 (that all NAs should conform to) to the syntactic validation. Therefore, it can be deployed in a **flexible way** approach.  More specifically:    **Changes at semantic level:** N/A    **Movement initiated under the previous DDNTA (5.14.1) release which continues its flow under the new DDNTA (5.15.0) release (open movement):** No issues are expected to occur in open movement case.    **Changes at syntactic level**  This IAR concerns changes at syntactic level, as it describes the addition of patterns to the decimal data items. That practically means that:   * If the sender is aligned with the proposed changes, and the recipient is not, then no syntactic rejection will be caused, since the sender ensures the quality of data according to DDCOM 20.3.0-v1.00 principles. * If the sender is not aligned with the proposed changes and the recipient is, then based on DDCOM, the sender should also ensure the quality of data, even if there is no syntactic check to verify this alignment to DDCOM 20.3.0-v1.00 “V.2.1.1.1” section. In this case no syntactic rejection shall be caused.     **Risk of not implementing the change**: In case of not implementing this change, the validation of DDCOM principles regarding numerical fields should be performed by the NAs by implementing extra rules/checks to verify the quality of the data that are exchanged.  **Proposed** date of applicability in Operations (T-Ops):   As soon as possible, at latest 1.12.2023  **Proposed** date of applicability in CT (T-CT):                     July 2022  **Expected** date of approval by ECCG (T-CAB):                  January 2022  **Impact on transition: None**  **Risk of not implementing the change: No** |

**Impact on CI artefacts**

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| DDNTA-5.14.01  (only in Appendix X) | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Updates in DDNXA Appendix X (stypes.xsd) as described in section 3 | |
| TRP-5.7.5 | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | New Appendix X in TRP. | |
| CTS 5.6.1-v1.00 | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | New Appendix X in CTS | |
| CRP 5.5.0 | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | A new version of CRP will be published due to the updates of its components. | |

**Estimated impact on National Project**

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|  | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | It is considered that the change proposed via the current IAR has not impact on business continuity, since it transfers the principles of DDCOM 20.3.0-v1.00 (that all NAs should conform to) to the syntactic validation. Therefore, it can be deployed in a flexible way approach. | |

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| **Document History** | | |  |
| **Version** | **Status** | **Date** | ***Comment*** |
| v0.10 | Draft by CUSTDEV | 10/11/2021 | *Draft by CUSTDEV* |
| v0.11 | Draft by CUSTDEV | 29/11/2021 | *Updates by CUSTDEV* |
| v0.12 | Updates by CUSTDEV | 15/12/2021 | *Version Update* |
| v1.00 | SfA to NPMs | 02/02/2022 | *Updates with turquoise* |
| v1.10 | SfA-IMP | 02/03/2022 | *SfA-IMP*  *with implemented changes* |