# Impact Analysis Report / RFC-Proposal

**Section 1: Meta-data**

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| **RFC ID** | **RFC\_NCTS\_0209** (JIRA:UCCNCTS-2881) |
| **Related Incident ID** | **None** |
| **RFC Initiator / Organization** | **DG TAXUD/B3 & SOFT-DEV** |
| **CI** | **NCTS-P5 (DDNTA-v5.15.0-v1.0.0 - CSE-v51.8.0)** |
| **Type of Change** | **Standard**  **Emergency** |
| **Nature of Change** | Justification for Evolutive   |  | | --- | |  | |
| **RFC Source** | |  |  | | --- | --- | | **Legal & Policy Change**  **Organisational Changes** | **Business Change**  **IT Change** | |
| **Review by Business User recommended?** | **Yes  No** |

***Change Summary***

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| **NCTS-P5 (DDNTA-5.15.0-v1.00 – Appendix X: Correction of ‘stypes.xsd’ & ‘ctypes.xsd’ by removing the unused simple types "NumType"; removal tag "xsdBaseType" in complex type~~; correction of simple data type "NumType" (xs:token -> xs:integer~~); correction of simple types ‘NumericWithZero\_*xx*’ and ‘DateTimeType’ and ‘DateType’, removal of (unused) ‘TimeType’.** |
| Removal from NCTS-P5 DDNTA 5.15.0-v1.00 Appendix X **"NumType"**  a few **unused simple types** that are using **NumType** as a base.  The data element "recoveryAcceptance" in **ctypes.xsd** will be harmonized to other flags by removing tag "xsdBaseType". The simple type "YearType" with <xs:restriction base="NumType"> remains used as base type in "YearContentType" in CD903D and CD411D messages, so "NumType" base type cannot be removed from **stypes.xsd**. |

**Section 2: Problem statement**

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| The following improvements have been identified:   1. ~~The simple data type "NumType" in~~ **~~stypes.xsd~~**~~, which represents numbers without decimal digits, should use "~~**~~xs:integer~~**~~" and it should not use "~~**~~xs:token~~**~~" as its~~ *~~xs:restriction~~* ~~base.~~ 2. In **ctypes.xsd**, the data element "recoveryAcceptance" should be harmonized to other flags (CL027) by removing the tag "xsdBaseType".   So, the simple type "RecoveryAcceptanceContentType" should not reference "Numeric\_1" and thus "RecoveryAcceptanceContentType” **would be no more used**.  So, the complex type "recoveryAcceptance" should not make **indirect use** of "NumType" ["recoveryAcceptance" is using "Numeric\_1" as xsdBaseType (in CD151C) and "Numeric\_1" uses "NumType" as it’s restriction (xs:restriction base="NumType")]. Complex type "recoveryAcceptance" should make **direct use** of ~~"NumType"~~ **the technical codelist (i.e. ‘Flag’) that is attached on it**.   1. The following data types referencing "NumType" which **are** **not used** i.e. "Numeric2","Numeric3","Numeric4","Numeric2Max","Numeric6Max","Numeric8Max","Numeric\_2","Numeric\_3","Numeric\_4","Numeric\_Max2","Numeric\_Max3","Numeric\_Max4","Numeric\_Max5","Numeric\_Max6","Numeric\_Max7","Numeric\_Max9","Numeric\_Max11","NumericMin4Max8","NumericMin4Max8Type","DayInTheMonthType" should be **removed** from **stypes.xsd**.   Note: the data type "NumType" cannot be completely removed from **stypes.xsd** because it is used by the simple type "YearType" as a restriction.   1. Simple types “NumericWithZero\_xx are defined by pattern “[0-9]{1,xx}”. This is wrong since it allows for leading zeroes, see DDCOM V.2.1.1.1 “leading zeroes shall not be used”. 2. The following pattern with unlimited length should be avoided:   • Simple type “DateType” allows for a pattern of unlimited length:  Sub-seconds are inappropriate for dates, not allowed by W3C standards and need to be disallowed to meet the basic an10 data format.  • Simple type “DateTimeType” allows for a pattern of unlimited length.  Sub-seconds need to be disallowed to meet the basic an19 data format.  (The xs base type is W3C’s xs:dateTime, in general allowing for sub-seconds. Therefore no restrictions apply at pure XSD level. NTAs not explicitly considering the an19 format on top but relying on the XSDs only might get trouble and might send inappropriate dateTime values to other NTAs)   1. Simple type “TimeType” is not used at all.   The point 3 has already been corrected in DDNTA-6.2.0-v1.00 (for NCTS-P6). |

**Section 3: Description of proposed solution**

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| In **DDNTA-5.15.0-v1.0.0 (incl. Appendix X) and the CSE-v51.8.0** the following corrections will be applied (addition of **text highlighted in yellow** – removal of ~~text with strikethrough~~):   1. **~~The file stypes.xsd will be modified as follows:~~**   **~~<!--================================================================================-->~~**  **~~<!--===== NumType -->~~**  **~~<!--================================================================================-->~~**  **~~<xs:simpleType name="NumType">~~**  **~~<xs:annotation>~~**  **~~<xs:documentation>Base class for all nN and n..N~~**  **~~types</xs:documentation>~~**  **~~</xs:annotation>~~**  **~~<xs:restriction base="xs:token" "xs:integer" />~~**  **~~</xs:simpleType>~~**   1. The data element "recoveryAcceptance" shall be harmonized:   The file **ctypes.xsd** will be corrected as follows:  <xs:complexType name="RecoveryType02">  <xs:annotation>  <xs:documentation>  <usedBy>Used by 1/91 messages: CD151C</usedBy>  </xs:documentation>  </xs:annotation>  <xs:sequence>  <xs:element name="recoveryAcceptance" type="Flag">  <xs:annotation>  <xs:documentation>  <description value="Recovery acceptance" />  <codeList code="CL027" type="technical" name="Flag" />  <format value="n1" />  <optionality value="R" />  ~~<xsdBaseType value="Numeric\_1" />~~  </xs:documentation>  </xs:annotation>  </xs:element>  <xs:element name="recoveryCommunicationDate" type="RecoveryCommunicationDateContentType">  <xs:annotation>  <xs:documentation>  <description value="Recovery communication date" />  <format value="an10" />  <optionality value="R" />  <xsdBaseType value="DateType" />  </xs:documentation>  </xs:annotation>  </xs:element>  <xs:element name="text" minOccurs="0" type="TextContentType01">  <xs:annotation>  <xs:documentation>  <description value="Text" />  <format value="an..512" />  <optionality value="O" />  <xsdBaseType value="AlphaNumeric\_MAX512" />  </xs:documentation>  </xs:annotation>  </xs:element>  </xs:sequence>  </xs:complexType>  The simple type "RecoveryAcceptanceContentType" ~~– not used –~~ shall be ~~removed~~ updated in **stypes.xsd**:  <!--================================================================================-->  <!--===== RecoveryAcceptance -->  <!--================================================================================-->  <xs:simpleType name="RecoveryAcceptanceContentType">  <xs:annotation>  <xs:documentation>  <usedBy>Used by 1/91 messages: CD151C</usedBy>  </xs:documentation>  </xs:annotation>  ~~<xs:restriction base="Numeric\_1" />~~  **<xs:restriction base="xs:token">**  **<xs:pattern value="[0-9]{1}" />**  </xs:restriction>  </xs:simpleType>   1. The following unused types will be removed in **stypes.xsd:**  |  |  | | --- | --- | | * DayInTheMonthType | * Numeric\_Max11 | | * Numeric2 | * Numeric\_Max2 | | * Numeric2Max | * Numeric\_Max3 | | * Numeric3 | * Numeric\_Max4 | | * Numeric4 | * Numeric\_Max5 | | * Numeric6Max | * Numeric\_Max6 | | * Numeric8Max | * Numeric\_Max7 | | * Numeric\_1 | * Numeric\_Max9 | | * Numeric\_2 | * NumericMin4Max8 | | * Numeric\_3 | * NumericMin4Max8Type | | * Numeric\_4 | * ~~RecoveryAcceptanceContentType~~ |   The file **stypes.xsd** will be corrected as follows:  ~~<!--================================================================================-->~~  ~~<!--===== DayInTheMonthType -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="DayInTheMonthType">~~  ~~<xs:annotation>~~  ~~<xs:documentation>Day in the Month (format:~~  ~~DD)</xs:documentation>~~  ~~</xs:annotation>~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="2" />~~  ~~<xs:pattern value="[0][1-9]|[1-2][0-9]|[3][0-1]" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric2 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric2">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="2" />~~  ~~<xs:pattern value="[0-9]{2}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric2Max -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric2Max">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="8" />~~  ~~<xs:pattern value="[0-9]{1,2}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric3 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric3">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="3" />~~  ~~<xs:pattern value="[0-9]{3}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric4 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric4">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="4" />~~  ~~<xs:pattern value="[0-9]{4}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric6Max -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric6Max">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="8" />~~  ~~<xs:pattern value="[0-9]{1,6}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric8Max -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric8Max">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="8" />~~  ~~<xs:pattern value="[0-9]{1,8}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_1 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_1">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="1" />~~  ~~<xs:pattern value="[0-9]" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_2 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_2">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="2" />~~  ~~<xs:pattern value="[0-9]{2}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_3 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_3">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="3" />~~  ~~<xs:pattern value="[0-9]{3}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_4 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_4">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:length value="4" />~~  ~~<xs:pattern value="[0-9]{4}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max11 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max11">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="11" />~~  ~~<xs:pattern value="[0-9]{1,11}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max2 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max2">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="2" />~~  ~~<xs:pattern value="[0-9]{1,2}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max3 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max3">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="3" />~~  ~~<xs:pattern value="[0-9]{1,3}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max4 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max4">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="4" />~~  ~~<xs:pattern value="[0-9]{1,4}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max5 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max5">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="5" />~~  ~~<xs:pattern value="[0-9]{1,5}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max6 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max6">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="6" />~~  ~~<xs:pattern value="[0-9]{1,6}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max7 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max7">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="7" />~~  ~~<xs:pattern value="[0-9]{1,7}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== Numeric\_Max9 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="Numeric\_Max9">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:maxLength value="9" />~~  ~~<xs:pattern value="[0-9]{1,9}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== NumericMin4Max8 -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="NumericMin4Max8">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:pattern value="[0-9]{4,8}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  ~~<!--================================================================================-->~~  ~~<!--===== NumericMin4Max8Type -->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="NumericMin4Max8Type">~~  ~~<xs:restriction base="NumType">~~  ~~<xs:pattern value="[0-9]{4,8}" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~   1. The file **stypes.xsd** will be corrected as follows:   **<!--================================================================================-->**  **<!--===== NumericWithZero\_3 -->**  **<!--================================================================================-->**  <xs:simpleType name="NumericWithZero\_3">  <xs:restriction base="xs:integer">  <xs:minInclusive value="0" />  <xs:maxInclusive value="999" />  <xs:pattern value="~~[0-9]{1,3}~~**(0|[1-9][0-9]{0,2})**" />  </xs:restriction>  </xs:simpleType>  **<!--================================================================================-->**  **<!--===== NumericWithZero\_4 -->**  **<!--================================================================================-->**  <xs:simpleType name="NumericWithZero\_4">  <xs:restriction base="xs:integer">  <xs:minInclusive value="0" />  <xs:maxInclusive value="9999" />  <xs:pattern value="**~~[0-9]{1,4}~~(0|[1-9][0-9]{0,3})**" />  </xs:restriction>  </xs:simpleType>  **<!--================================================================================-->**  **<!--===== NumericWithZero\_8 -->**  **<!--================================================================================-->**  <xs:simpleType name="NumericWithZero\_8">  <xs:restriction base="xs:integer">  <xs:minInclusive value="0" />  <xs:maxInclusive value="99999999" />  <xs:pattern value="**~~[0-9]{1,8}~~(0|[1-9][0-9]{0,7})**" />  </xs:restriction>  </xs:simpleType>  **<!--================================================================================-->**  **<!--===== NumericWithZero\_9 -->**  **<!--================================================================================-->**  <xs:simpleType name="NumericWithZero\_9">  <xs:restriction base="xs:integer">  <xs:minInclusive value="0" />  <xs:maxInclusive value="999999999" />  <xs:pattern value="**~~[0-9]{1,9}~~(0|[1-9][0-9]{0,8})**" />  </xs:restriction>  </xs:simpleType>   1. The file **stypes.xsd** will be corrected as follows:   **<!--================================================================================-->**  **<!--===== DateTimeType -->**  **<!--================================================================================-->**  <xs:simpleType name="DateTimeType">  <xs:annotation>  <xs:documentation>The date is in the Common Era (minus sign in years is not permitted) and time zone although not included UTC is implied</xs:documentation>  </xs:annotation>  <xs:restriction base="xs:dateTime">  <xs:pattern value="\d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}~~(\.\d+)?~~" />  </xs:restriction>  <!-- Updated -->  </xs:simpleType>  **<!--================================================================================-->**  **<!--===== DateType -->**  **<!--================================================================================-->**  <xs:simpleType name="DateType">  <xs:annotation>  <xs:documentation>Calendar dates are represented yyyy-mm-dd format, following ISO 8601. This is a W3C XML Schema date type, but without the optional timezone data.</xs:documentation>  </xs:annotation>  <xs:restriction base="xs:date">  <xs:pattern value="\d{4}-\d{2}-\d{2}~~(\.\d+)?~~" />  </xs:restriction>  <!-- Updated -->  </xs:simpleType>   1. The file **stypes.xsd** will be corrected as follows:   ~~<!--================================================================================-->~~  ~~<!--=====~~ **~~TimeType~~** ~~-->~~  ~~<!--================================================================================-->~~  ~~<xs:simpleType name="TimeType">~~  ~~<xs:annotation>~~  ~~<xs:documentation>The time zone although not included UTC is implied</xs:documentation>~~  ~~</xs:annotation>~~  ~~<xs:restriction base="xs:time">~~  ~~<xs:pattern value="\d{2}:\d{2}:\d{2}(\.\d+)?" />~~  ~~</xs:restriction>~~  ~~</xs:simpleType>~~  In **DDNTA-6.2.0-v1.0.0 (Appendix X) and the CSE-v60.4.0** the corrections for point 3 was already applied. Only the points 2, 4, 5 and 6 remain to be corrected.  **IMPACT ASSESSMENT:**  This RFC-Proposal concerns mainly documentary changes, or (marginal) improvement of the existing XSD, thus there is no risk on business continuity.  **Proposed** date of applicability in Operations (**T-Ops**):   Flexible - No impact on Operations – Documentary fix.  **Proposed** date of applicability in CT (**T-CT**):                     At latest 15.03.23 – No impact on Conformance Testing.  **Expected** date of approval by ECCG (**T-CAB**):                  13.01.2023.  **Impacted messages:**      Not applicable.  **Risk in case of non-implementation:**         ~~Not applicable.~~ Extremely low, considering the existing Conformance Testing activities.  **Impacted CI Artefacts:**   * DDNTA-5.15.0-v1.00 (Main Document): No. * **DDNTA-5.15.0-v1.00 (Appendix ‘X’): Yes.** * **CSE-v51.8.0: Yes.** * Functional Specifications NCTS-P5 (FSS/BPM): 5.30.2: No. * DDCOM-20.4.0-v1.00: No. * **DMP Package-v5.7.0-v1.00:  Yes.** * **CTS-5.7.1-v1.00:  Yes.** * ACS Main Document: v5.8.0-v1.00 & ACS Annex for NCTS: 5.8.0-v1.00: No. * CTP-5.10.0-v1.00: No. * **TRP-5.11.1:  Yes.** * CRP-5.7.4-v1.00: No. * ieCA 1.0.4.1: No. * AES-P1 and NCTS-P5 Long-Lived “Legacy” (L3) Movements Study v1.50-v1.00: No. * CS/MIS2\_DATA: No. * CS/RD2\_DATA: No. * UCC IA/DA Annex B: No. * **NCTS-P6:  - DDNTA-6.2.0-v1.00 (Appendix ‘X’): Yes. -** Functional Specifications NCTS-P6 (FSS/BPM): No. |

**Impact on CI artefacts**

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| **CSE-v51.8.0** / **DDNTA-v5.15.0-v1.00 (Appendice X)**  **Similar for DDNTA-6.2.0** | Cosmetic  Low  Medium  High  Very High   |  | | --- | | Only Appendix X, generated from Specs/Manager – Very minor impact, as defined in section 3. | |
| **CRP-v5.7.2-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Re-use of the corrected/optimized XSD files. | |
| **CTS-5.7.1-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Re-use of the corrected/optimized XSD files. | |

**Estimated impact on National Project**

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| Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Re-use of the cleaned XSD to be assessed by each NA. | |

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| **Document History** | | | |
| **Version** | **Status** | **Date** | ***Comment*** |
| v0.10 | Draft by SOFTDEV | 18/11/2022 | *Draft by SOFTDEV* |
| v0.20 | Draft by TAXUD/B3 | 09/01/2023 | *Structuration and corrections* |
| v1.00 | SfA to NPMs | 10/01/2023 | ***Cleaning of XSD without impact on data quality, no effective increase/release of constraints.***  ***Already applied in NCTS-P6 (DDNTA-6.2.0), partially.*** |
| v1.10 | SfA to NPMs with **implementation details** | 31/01/2023 | *Implementing comments received from NA-DE.*  *The corrections applied (points 1, 2, 3) and the extra corrections defined on* ***stypes*** *(points 4, 5 6) are made highly visible ~~text removed~~ – text added, compared to v1.00.* |