Impact Analysis Report / RFC-Proposal

**Section 1: Meta-data**

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| --- | --- |
| **RFC ID** | **RFC\_DDCOM\_0023** (RTC-58143) |
| **Related Incident ID** | IM456334 |
| **RFC Initiator / Organization** | DG TAXUD/B3, NA-GB, NA-NL |
| **CI** | DDCOM 20.3.0-v1.00 |
| **Type of Change** | **Standard** **Emergency** |
| **Nature of Change** | Justification for Evolutive   |  | | --- | | Change on the maximum allowed (uncompressed) message size | |
| **RFC Source** | |  |  | | --- | --- | | **Legal & Policy Change**  **Organisational Changes** | **Business Change**  **IT Change** | |
| **Review by Business User recommended?** | **Yes No** |

***Change Summary***

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| --- |
| **DDCOM-20.3.0-v1.00: Clarification on section "VIII.2.26 Maximum Message size"** |
| DDCOM 20.3.0-v1.00 need to be enhanced in order to eliminate any ambiguity and to be sure that NAs know exactly what will be the largest XML file they will receive, while   * limiting the exchange on CCN of NCTS-P5 or AES files that are large enough to transport the number of goods items that the business needs; * without putting at risk the performance of the NTA / NECA, and * without putting at risk the capacity of the CCN network. |

**Section 2: Analysis**

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| The scope of this request for change, from the NAs perspective, is to clearly state the network operation model and to identify the size of messages that could be exchanged between new systems, based on the different exchange format and increased number of iterations comparing to the old phases.  Based on this, DDCOM’s statement regarding the limit of 20MB compressed message needs to be evaluated and considered based on the infrastructure capacity and limitations.  *Message size statistics based on ECS-P2/NCTS-P4 business specifications*  In NCTS-P4 Business Statistics, the declarations are split in 4 categories: declarations with up to 10 goods items, range 11-100, range 101-500, more than 500 goods items.  The categories of *Nr of Goods Item per declaration in NCTS-P4* are illustrated below (covering the whole period 2013-2021M10), per country of departure:    From CS/MIS Business Statistics, for the period 2013M01-2021M10:   * NTAs from 27 countries received declarations from Trade with more than 100 goods items * NTAs from 21 countries received declarations from Trade with more than 500 goods items     The other countries did not receive declarations with more than 500 goods items.  For the Year 2021, the percentages per country of departure for the various categories are the following (sorted per number of T173(more than 500 G.I.):    It should be noted that there seems to be a very small trend to get a higher proportion of more goods items per movement, visible for two years, when we zoom in as in the next chart for NCTS-P4 operations.  Similar observations for ECS-P2 (for the period 2020M11-2021M10):   * NECAs from 22 countries received declarations with more than 100 goods items * NECAs from 10 countries received declarations with more than 500 goods items       The number of declarations with more than 500 goods items is very limited and concentrated in NA-DE and NA-SE mainly.  The following graphs presents the distribution of the size of the top 10 000 largest messages exchanged in operations for ECS-P2 and NCTS-P4, since 01.01.2016.    Figure 1: ECS-P2 - Frequency of maximum messages Figure 2: NCTS-P4 - Frequency of maximum messages    Figure 3: NCTS-P4 – Top 10 000 messages exchanged from/to  The very large majority of the 10 000 largest messages (**EDIFACT**) are smaller than **400 KB**.  The maximum size of **EDIFACT** messages that are exchanged in operations **do not exceed 1.55 MB**.  These sizes concern uncompressed messages.  In the new phases, messages exchanged on the Common Domain **must be in XML format** and no more in EDIFACT. When an EDIFACT message is transformed and upgraded to the XML format of the new systems (AES-P1/NCTS-P5), the **XML file is 3 to 7 times larger than the EDIFACT message**.  Therefore, it can be estimated that if the largest EDIFACT messages observed in operations would be upgraded in To-Be format, the maximum size of the XML message size would be no more than **11.0 MB without any compression applied**.  *Message size examples compiled based on NCTS-P5/AES-P1 business specifications*  New specifications for AES-P1 DDNXA/NCTS-P5 DDNTA 5.14.0 are based on different structure with multiple iterations on various levels.  For NCTS, the structure of NCTS-P5 has been changed thoroughly comparing to NCTS-P4, having the new level of <House Consignment> (999x) and inside each <House Consignment> there can be up to 9999x <Consignment Item> datagroups. On top of this, the total declared <Consignment item> datagroups in the whole <Consignment> can be **maximum 99999x**, while in the currently operational NCTS-P4 the number of maximum <Goods item> iterations are up to **999x**.  For AES-P1 the structure is more limited, having the <Goods Shipment> and <Consignment> levels that are only 1x and the <Goods item> level that can be up to **9999x**. This is also increased comparing to the ECS-P2 maximum <Goods item> iterations that are currently up to **999x**.  In addition to the aforementioned increases in the basic structural datagroups of NCTS-P5/AES-P1 messages, there are numerous of changes in the internal business datagroups, like business traders, related documents, ways of packaging etc. In new systems, all this information has the flexibility to be presented in one or more than one levels according to the business needs, giving an extra amount of information to the created, comparing to the messages of the current operational systems. On top of this, the length for the majority of data items have been also extended to cover the business needs.  Based on all above, **it is expected that the messages that are going to be exchanged in new systems are going to have a larger size**, comparing to those that are upgraded from the legacy exchanged ones. It is important here to note, that during the Transitional Period, the structure of message exchanges is also transitional, by enabling certain transitional rules and conditions and by limiting the iterations of datagroups to make the messages compatible and convertible to the legacy structures. Therefore, the increased size of messages will be observed after the end of the Transitional Period.  A simulation for the creation of NCTS-P5/AES-P1 messages based on the specifications of Transitional and Post-Transitional Period has been performed, in order to measure the approximate size of these exchanges. The exercise focused on the following steps:   1. Targeting the **maximum iterations** for the basic structural datagroups, i.e. <**House Consignment**> and <**Consignment Item**> for NCTS-P5 and <**Goods item**> for AES-P1; 2. Setting the **maximum iterations** for all **internal datagroups** (traders, documents, packages etc); 3. **Repeating** steps (a) and (b) based on Transitional message structures.   The same exercise was repeated for the legacy phases (NCTS-P4 and ECS-P2) in order to calculate the theoretical maximum for these phases and be compared with the statistics from the operations. In this way, the target was set to create legacy messages with the maximum iterations for the basic structural datagroups, i.e. <Goods item> for NCTS-P4 and ECS-P2, and setting the maximum information that can be upgraded in internal datagroups (meaning that any datagroups that are loss of information during upgrade have not been filled in).  The following tables depict the results of the exercise, combined with the statistics from the operations as well, in order to illustrate the differences in message size of various phases and formats:   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | # | Domain | Phase | HC | HCI | EDIFACT  Msg Size | Uncompressed Approximate XML Legacy Msg Size | Uncompressed Approximate XML To-Be  Msg Size | Compressed Approximate  Msg Size | | 1 | NCTS-P4 | Operational | Less than 999 G.I. | | 1.2 MB | N/A | N/A | N/A | | 2 | NCTS-P4 | Theoretical | 1 | 200 | 4.7 MB | 14 MB | 14 MB | 6 KB | | 3 | NCTS-P4 | Theoretical | 1 | 999 | 25 MB | 82 MB | 82 MB | 21 KB | | 4 | NCTS-P5 | During TP (Theoretical) | 1 | 99 | 1.4 MB | 4.7 MB | 12.5 MB | 9 KB | | 5 | NCTS-P5 | During TP (Theoretical) | 1 | 999 | N/A | N/A | 122 MB | 32 KB | | 6 | NCTS-P5 | Post-TP (Theoretical) | 1 | 9999 | N/A | N/A | 32.6 MB | 26 KB | | 7 | NCTS-P5 | Post-TP (Theoretical) | 999 | 1 | N/A | N/A | 3.5 MB | 5 KB | | 8 | NCTS-P5 | Post-TP (Theoretical) | 10+1 | 9999+9 | N/A | N/A | 330 MB | 330 KB | | 9 | NCTS-P5 | Post-TP (Theoretical) | 99 | 99 | N/A | N/A | 2 GB | 40 MB | | 10 | NCTS-P5 | Post-TP (Theoretical) | 10+1 | 9999+9 | N/A | N/A | 23.6 GB | 445 MB |   Table 1: IE001 messages – Observed and estimated sizes in EDI & XML  *Note for Table 1: The above cases depict:*   * *#1, #2, #3: NCTS-P4 messages* * *#4, #5: NCTS-P5 message created with maximum multiplicity of ALL DGs as allowed during TP* * *#6, #7, #8: NCTS-P5 message created with limited multiplicity of internal DGs (one if required)* * *#9: NCTS-P5 message created with maximum multiplicity of some internal DGs (e.g. Documents, Transport Equipment)* * *#10: NCTS-P5 message created with maximum multiplicity of ALL internal DGs* * *As illustrated by the yellow cells: the ratio EDIFACT/XML is estimated at about 3x* * *A compressed file of 20MB could become 1 GB (XML) once uncompressed.*  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | # | Domain | Phase | GI | EDIFACT Msg Size | Uncompressed Approximate  XML Legacy  Msg Size | Uncompressed Approximate  XML To-Be  Msg Size | Compressed Approximate Msg Size | | 1 | ECS-P2 | Operational | 999? | 1.6 MB | N/A | N/A | N/A | | 2 | ECS-P2 | Theoretical | 100 | 2.6 MB | 7.8 MB | 7.8 ΜΒ | 6KB | | 3 | ECS-P2 | Theoretical | 999 | 25 MB | 73.3 MB | 73.3 MB | 30ΚΒ | | 4 | AES-P1 | During TP (Theoretical) | 99 | 1.5 MB | 4 MB | 8 MB | 7 KB | | 5 | AES-P1 | During TP (Theoretical) | 999 | N/A | N/A | 99.5 MB | 24 KB | | 6 | AES-P1 | Post-TP (Theoretical) | 9999 | N/A | N/A | 33 MB | 26 KB | | 7 | AES-P1 | Post-TP (Theoretical) | 9999 | N/A | N/A | 2.3 GB | 42 MB | | 8 | AES-P1 | Post-TP (Theoretical) | 9999 | N/A | N/A | 33 GB | 610 MB |   Table 2: IE501 messages– Observed and estimated sizes in EDI & XML  *Note for Table 2: The above cases depict:*   * *#1, #2, #3: ECS-P2 messages* * *#7, #8: AES-P1 message created with maximum multiplicity of ALL DGs as allowed during TP* * *#4: AES-P1 message created with limited multiplicity of internal DGs (one if required)* * *#5: AES-P1 message created with maximum multiplicity of some internal DGs (e.g. Documents, Transport Equipment)* * *#6: AES-P1 message created with maximum multiplicity of ALL internal DGs*   Concerning the new systems, the above tables illustrate the approximate **theoretical** maximum sizes of message exchanges in new systems. This theoretical approach is based on the allowed multiplicities of the new specifications, which is set to be the maximum in each scale (hundred, thousand etc). For example, if the maximum business need for a datagroup is 100 iterations, the maximum multiplicity of the specific datagroup in new systems specifications is 999x. This increases the theoretical allowed iterations, while business wise the 999x limit will never happen. This example indicates that the **real** maximum message sizes in new systems would be smaller than the theoretical maximum message.  This is also proven with the results depicted in the above tables concerning the **legacy phases**. The ***maximum operational sizes*** are much lower than the ***theoretical maximum sizes*** calculated based on the legacy specifications.  *Compression rate in message size examples of NCTS-P5/AES-P1*  Although the theoretical message size is expected to be much larger than the operational message size, the above tables depict another crucial issue: the size of the **compressed** message size is very small comparing to the **uncompressed** message size. This is normal, since customs message exchanges will be based on XML text files, which can be compressed to a very high percentage of compression rate.  This high compression rate on XML text files, would allow a “small” compressed package to be transferred over the CCN network, while the actual, uncompressed, message would be very difficult to be processed by the National applications (NECA / NTA). For example, based on the results of the above tables, **a compressed message with 20MB size could *hide* an uncompressed message of 1GB size**. This is the reason that DDCOM should specify an upper limit of uncompressed message size in section “VIII.2.26 Maximum Message size”.  *Network infrastructure details*  From network infrastructure point of view, the following schema depicts the different points on the message transmission:  A picture containing shape  Description automatically generated  Figure 3: Message transmission  As depicted by the schema above, the compression requested by the CSI application is used only for the NA link (between the sending application and the local gateway) and this is based on QoS. The compression algorithm is LZW. As any compression algorithm, the compression rate is completely dependent of the data to compress. This varies from 0% for binary data, to 60-70% for text, based on the LZW documentation.  The message is uncompressed at arrival on the local gateway, and it is transferred uncompressed through the network to the Receiving Gateway. The Reader CSI app is free to request compression or not on its NA link, given that its CSI stack supports it.  Between gateways, there can be a compression implemented on IBM MQ channels. These are certain channels of communication back and forth between NAs’ gateways, e.g. BE-FR, FR-BE etc. These channels can be configured to allow the compression of the information that is transmitted and **this is managed by ITSM OPS**. As a summary, **the transmission from gateway to gateway is managed by the Commission and the NAs do not need to apply any different configuration**. Regarding the transmission between CSI application to the National Gateway, **the NAs are allowed to configure the compression or not**, taking into consideration the capacity or other limitations of their network.  Although, the capacity of gateways is stressed by sending very big messages, in terms of processing and transferring, the **most limiting factor** is the **capacity** **of the NA application** on processing these (potentially) very big messages.  Based on all above, any limitation on the maximum message size should be applied on the application level and should reference to the **uncompressed** size of the message.  *Proposed message size and various message combinations*  Taking into consideration, the above analysis on the network structure, the operational message sizes for NCTS-P4/ECS-P2 and the calculated message sizes for NCTS-P5/AES-P1, **a reasonable upper limit should be set to message exchanges in order to allow its efficient processing by the NA applications, while not putting extreme pressure on the NA link.**  After excluding the theoretical maximum sizes (that are larger than 300 MB), which are considered as not realistic, the **uncompressed size of 20 MB is proposed to be the *strongly recommended maximum message size to be received from traders***. This could generate messages on the Common Domain, which have a maximum size of approximately 20 MB. Maybe less, maybe more, depending on the exact structure defined by each NA for the External Domain messages. To avoid immediate dropping or rejection if the message size reaches 20,0001 MB, an ***absolute maximum size of messages to be sent on the Common Domain*** is defined to give security margin: **40 MB the absolute upper limit**, after which an NA is allowed to **drop or reject** the message received. The range 20MB-40MB is considered reasonable message size. It will satisfy the business needs of NCTS-P5/AES-P1 in 2023 and following years.  As an indication to the NAs on the capacity of 40MB messages, the following tables illustrate some examples of combinations for both NCTS-P5 and AES-P1 (only datagroups with multiplicity>1 are included in these tables):   | NCTS-P5 CD001C Data Group Name | Multiplicity | 40 MB (a) | 40 MB (b) | 40 MB (c) | | --- | --- | --- | --- | --- | | TRANSIT OPERATION | 1x | 1 | 1 | 1 | | RISK ANALYSIS IDENTIFICATION | 1x | 1 | 1 | 1 | | ---RISK ANALYSIS | 99999x | 150 | 150 | 99 | | ------RISK ANALYSIS RESULT | 99x | 99 | 99 | 99 | | CONSIGNMENT | 1x | 1 | 1 | 1 | | ---ADDITIONAL SUPPLY CHAIN ACTOR | 99x | 99 | 99 | 99 | | ---TRANSPORT EQUIPMENT | 9999x | 1 | 1 | 1 | | ------SEAL | 99x | 99 | 99 | 99 | | ------GOODS REFERENCE | 9999x | 99 | 1 | 99 | | ---COUNTRY OF ROUTING OF CONSIGNMENT | 99x | 99 | 99 | 99 | | ---ACTIVE BORDER TRANSPORT MEANS | 9x | 9 | 1 | 9 | | ---PREVIOUS DOCUMENT | 9999x | 999 | 99 | 99 | | ---SUPPORTING DOCUMENT | 99x | 1 | 99 | 1 | | ---TRANSPORT DOCUMENT | 99x | 99 | 1 | 1 | | ---ADDITIONAL REFERENCE | 99x | 1 | 1 | 1 | | ---ADDITIONAL INFORMATION | 99x | 99 | 1 | 1 | | ---HOUSE CONSIGNMENT | 999x | 10 | 105 | 55 | | ------ADDITIONAL SUPPLY CHAIN ACTOR | 99x | 99 | 1 | 5 | | ------DEPARTURE TRANSPORT MEANS | 999x | 99 | 1 | 99 | | ------PREVIOUS DOCUMENT | 99x | 1 | 1 | 1 | | ------SUPPORTING DOCUMENT | 99x | 99 | 1 | 5 | | ------TRANSPORT DOCUMENT | 99x | 99 | 1 | 1 | | ------ADDITIONAL REFERENCE | 99x | 99 | 1 | 1 | | ------ADDITIONAL INFORMATION | 99x | 99 | 1 | 1 | | ------TRANSPORT CHARGES | 1x | 1 | 1 | 1 | | ------CONSIGNMENT ITEM | 9999x | 19 | 101 | 10 | | ---------ADDITIONAL SUPPLY CHAIN ACTOR | 99x | 99 | 1 | 1 | | ---------COMMODITY | 1x | 1 | 1 | 1 | | ------------COMMODITY CODE | 1x | 1 | 1 | 1 | | ------------DANGEROUS GOODS | 99x | 99 | 1 | 1 | | ------------GOODS MEASURE | 1x | 1 | 1 | 1 | | ---------PACKAGING | 99x | 50 | 1 | 50 | | ---------PREVIOUS DOCUMENT | 99x | 50 | 1 | 50 | | ---------SUPPORTING DOCUMENT | 99x | 99 | 1 | 1 | | ---------TRANSPORT DOCUMENT | 99x | Ν/Α | Ν/Α | Ν/Α | | ---------ADDITIONAL REFERENCE | 99x | 99 | 1 | 50 | | ---------ADDITIONAL INFORMATION | 99x | 99 | 1 | 50 |   Table 3: NCTS-P5 CD001C messages with msg size: 40 MB   | AES-P1 CD501C Data Group Name | Multiplicity | 40 MB (a) | 40 MB (b) | 40 MB (c) | | --- | --- | --- | --- | --- | | EXPORT OPERATION | 1x | 1 | 1 | 1 | | RISK ANALYSIS IDENTIFICATION | 1x | 1 | 1 | 1 | | ---RISK ANALYSIS | 99999x | 2 | 2 | 2 | | ------RISK ANALYSIS RESULT | 99x | 1 | 1 | 1 | | GOODS SHIPMENT | 1x | 1 | 1 | 1 | | ---PREVIOUS DOCUMENT | 99x | 1 | 99 | 1 | | ---SUPPORTING DOCUMENT | 99x | 1 | 99 | 1 | | ---ADDITIONAL REFERENCE | 99x | 1 | 99 | 1 | | ---ADDITIONAL INFORMATION | 99x | 1 | 99 | 1 | | ---CONSIGNMENT | 1x | 1 | 1 | 1 | | ------TRANSPORT EQUIPMENT | 9999x | 2 | 2 | 2 | | ---------SEAL | 99x | 10 | 10 | 10 | | ---------GOODS REFERENCE | 9999x | 1 | 1 | 1 | | ------DEPARTURE TRANSPORT MEANS | 999x | 1 | 1 | 1 | | ------COUNTRY OF ROUTING OF CONSIGNMENT | 99x | 1 | 1 | 1 | | ------TRANSPORT DOCUMENT | 99x | 1 | 1 | 1 | | ---GOODS ITEM | 9999x | 1180 | 195 | 2000 | | ------PROCEDURE | 1x | 1 | 1 | 1 | | ---------ADDITIONAL PROCEDURE | 99x | 10 | 99 | 1 | | ------ADDITIONAL SUPPLY CHAIN ACTOR | 99x | 10 | 99 | 1 | | ------COMMODITY | 1x | 1 | 1 | 1 | | ------------TARIC ADDITIONAL CODE | 99x | 10 | 99 | 1 | | ---------DANGEROUS GOODS | 99x | 10 | 99 | 1 | | ------PACKAGING | 99x | 10 | 99 | 1 | | ------PREVIOUS DOCUMENT | 99x | 10 | 30 | 10 | | ------SUPPORTING DOCUMENT | 99x | 10 | 30 | 10 | | ------TRANSPORT DOCUMENT | 99x | Ν/Α | Ν/Α | Ν/Α | | ------ADDITIONAL REFERENCE | 99x | 10 | 30 | 10 | | ------ADDITIONAL INFORMATION | 99x | 10 | 30 | 10 |   Table 4: AES-P1 CD501C messages with msg size: 40 MB  Finally, it shall be noted that :   * a number of NAs are already limiting strictly the maximum number of goods items per declaration (e.g. up to 100, up to 400) and communicated their intention to not modify their policy. * a reasonable business need seems to be estimated at the level of maximum 1500 goods items per declaration.   The size of the top 10 largest messages sent/received per NA in 2021 are the following:          **APO on COMMENTS #11 12 13 14 15 16 17 FROM DE, FI, NL:**  *The precise details of the changes to be applied in DDNTA and DDNXA will be documented in two new RFC-Proposals dedicated to NCTS (see* **RFC\_NCTS\_0175\_CUSTDEV3-IAR-RTC60055-v1.00(SfA-NPM).docx***) and AES (see* **RFC\_AES\_0131\_CUSTDEV3-IAR-RTC60056-v1.10(SfA-IMP).docx***) respectively.*  *1.*  *After verification with the DG TAXUD B1 DIH sector, it is confirmed that the UCC-DA Annex B and UCCIA- Annex B do not need to be modified if the Technical Specifications are modified to restrict the multiplicities.*  *The multiplicities mentioned in the technical specifications can be lower than what is defined in the Annex B. This is already the case and will remain the case. There is no need to change the legislation.*  *We invite the National Team to read the document published on CIRCABC (please visit https://circabc.europa.eu/ui/group/e4acd3f4-55b0-4a97-9a71-1182943c0bd0/library/79635c27-3738-40ce-bcb2-b1093d115753/details). If a National Team consider that a change is needed in the legislation, the DIH Committee should be invited to take such decision.*  *In the shorter term, a decision must be taken to keep the deadline operational.*  *2.*  *We support the approach to update the chapters I.2.4.3 of DDNXA and I.III.4 of DDNTA (Main Documents) to document/highlight the decision to apply different multiplicities in this version of DDNxA, different from the maximum values defined in Annex B.*  *3.*  *In order to prevent “oversized” AES messages both on External Domain and on Common Domain,*  *AND to minimize the impact on the national specifications of NECAs*  *AND to minimize the impact on the national specifications already published to National traders / software companies*  *AND to keep a maximum number of goods items that appears currently as sufficient in current practice (very few Export declarations with more than 900 goods items)*  *AND to keep the deadlines agreed so far;*  *it is proposed to modify the DDNXA as follows:*  *-a-*  *the TRT E1402 is removed from*  */\*/GoodsShipment/GoodsItem*  */\*/GoodsShipment/Consignment/TransportEquipment/GoodsReference*  */\*/Consignment/TransportEquipment/GoodsReference*  */\*/ControlDetails/GoodsReference*  *where the multiplicity shall be changed (permanently) from '9999x' to '999x'.*  *-b-*  ~~the format of "Declaration goods item number" is changed from "n..5" to "n..4" (to remain consistent with NCTS-P5)~~  ~~AND~~  *a new guideline G0999 is applied on "Declaration goods item number", that explains that:*  *"The format is defined as 'n..5' (for consistency reasons), but the maximum value for AES is '999', taking into account the multiplicity '999x' of the Data Group."*  *4.*  *In order to prevent “oversized” NCTS messages both on External Domain and on Common Domain,*  *AND to minimize the impact on the national specifications of NTAs*  *AND to minimize the impact on the national specifications already published to National traders / software companies*  *AND to take into account the above restrictions applied on AES*  *AND to increase slightly the (post-TP) maximum number of goods items that can be managed in case of multiple House Consignments, while the current limit of 999x appears currently as sufficient in current practice (very few Transit declarations with more than 900 goods items)*  *AND to keep the deadlines agreed so far;*  *it is proposed to modify the DDNTA as follows:*  *-a-*  *the TRT E1402 is removed from*  */\*/Consignment/HouseConsignment/ConsignmentItem*  *where the multiplicity shall be restricted to '999x' in place of 9999x.*  *-b-*  ~~the format of "Declaration goods item number" is changed from "n..5" to "n..4"~~  ~~AND~~  *a new Guideline G1999 is applied on "Declaration goods item number", that defines that:*  *"The maximum value of "Declaration goods item number" is 1999 (restricted via XSD pattern)."*  *-c-*  *The multiplicity of*  */\*/Consignment/HouseConsignment*  *shall be changed from '999x' to '99x.*  *The new Guideline G1999 applied on "Declaration goods item number" could be adapted in the future if the business needs are modified and if the NTAs are adapted to process bigger declarations in an efficient way.*  *This reduction of ~98% will lead to message sizes that will not conflict with the DDCOM size limit of 20 MB on the External Domain and 22 MB on the Common Domain.* |

**Section 3: Description of proposed solution**

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| The following updates will be performed into the **DDCOM-20.3.0-v1.00** (~~deleted text strikethrough and red colour~~ and added text in yellow).  **VIII.2.26 Maximum Message size:**  The maximum size of a message handled by the CSI stacks (NJCSI, C CSI) is 4GB. The recommended limit (for the data before encryption) is ~10% lower, if integrity or confidentiality is enabled in the applied Quality of Service.  For the purpose of NCTS-P5 and AES-P1:   * the highly recommended maximum size of the CCN message ~~(after compression)~~ is set to be ~~fixed~~ at 20 Mbytes without any compression applied, and * the strictly allowed maximum size of the CCN message shall not be more than ~~40~~ 22 Mbytes without any compression applied, and * if a message is sent by mistake on the Common Domain, with a size larger than ~~40~~ 22 Mbytes, then the receiving country ~~is allowed to drop this message (i.e. to send only the CoA and to delete the message without sending the CoD).~~ shall reject this oversized message by means of CD917C with the following content:   errorLineNumber=0,  errorColumnNumber=0,  no errorPointer,  errorCode=52,  errorText=”maximum input size exceeded”,  originalAttributeValue=<actual size>.  Consequently, the National Applications must define and apply limits on the declaration messages, to avoid that a declaration message is accepted from the declarant, but cannot be exchanged on the Common Domain. Each National Transit Application must be able to receive and process the Common Domain messages with the multiplicity defined in the Appendix Q2 (when the size of the message is below the limit of ~~40~~ 22 MBytes per uncompressed message). ~~A similar~~ The same approach is applicable to AES-P1.  **Impacted CIs**:   1. DDCOM 20.3.0-v1.00: **Yes** 2. CTP-5.7.0-v1.00: **Yes** 3. TRP-5.7.0-v1.00: **Yes**   + impact on DDNTA-5.14.1-v1.00  + impact on DDNXA-5.14.1-v1.00  **IMPACT ASSESSMENT:**  **Impact on External Domain:** the limitation applied on the message size is lower. The impact applied ONLY **after** the end of the Transitional Period. It can be implemented by each NA in a flexible way (no big-bang) but at the very latest before the end of the Transitional Period.  This RFC-Proposal is **not a documentarychange**.  This RFC-Proposal has no impact on the business continuity.  **Proposed** date of applicability in Operations (T-Ops): Ideally before starting the AES / NCTS-P5 operations, at the latest by 01.12.2023 (**flexible**)  **Proposed** date of applicability in CT (T-CT): July 2022  **Expected** date of approval by ECCG (T-CAB): ~~January~~ February 2022  **Impact on transition Legacy/To-Be:** None  **Consequence of not approving the RFC-Proposal**: Incorrect specification, possible confusion of National development teams.  **Impact in case of no Implementation:** Possible problems in some NCA if a very large message will be created after the Transitional Period. |

**Impact on CI artefacts**

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| **DDCOM 20.3.0-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Updates as described in section 3. | |
| **CTP-5.7.0-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Alignment of scenarios according to the updates of specifications. | |
| **TRP-5.7.5-v1.01** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Addition of test cases with a very large message size. | |
| **DDNTA-5.14.1-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Will be documented in a separate RFC-Proposal for NCTS-P5 | |
| **DDNXA-5.14.1-v1.00** | Cosmetic  Low  Medium  High  Very High  Short description   |  | | --- | | Will be documented in a separate RFC-Proposal for AES-P1 | |

**Estimated impact on National Project**

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| Cosmetic  Low  Medium?  High  Very High  Short description   |  | | --- | | Impact to be assessed by each NA on the mechanisms needed to monitor the size of exchanged messages (Messages received from trade and messages sent to / received from the External Domain. | |

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| **Document History** | | | |
| **Version** | **Status** | **Date** | ***Comment*** |
| v0.10 | Draft by CUSTDEV | 03/11/2021 |  |
| v0.11 | Comments by DG TAXUD | 04/11/2021 |  |
| v0.20 | Updates by CD3 | 30/11/2021 |  |
| v0.21 | Updates by CD3 | 10/12/2021 |  |
| v0.22 | SfR to NPMs | 13/12/2021 |  |
| v1.00 | SfA to NPMs | 02/03/2022 | *Implementing comments #11 12 13 14 15 16 17 from DE, FI and NL.* |
| v1.10 | SfA to NPMs | 03/03/2022 | *SfA with implementation details* |
| v1.20 | SfA to NPMs | 06/04/2022 | *Implementation of DDCOM SfR Review NA-DE comment #10* |