



**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL  
TAXATION AND CUSTOMS UNION  
Resources  
**Taxation systems and IT compliance**

## **VAT INFORMATION EXCHANGE SYSTEM (VIES)**

### **VAT NUMBER CONSTRUCTION RULES FUNCTIONAL DESCRIPTION (VERSION 15.0)**

## DOCUMENT CHANGE RECORD

Version	Date	Description	Affected sections
0.1	01/07/2003	First diffusion of draft as a working document	–
1.0	15/07/2003	First diffusion	All
2.0	27/10/2003	Amendment to SK validation numbers	3.12
		Corrected wrong Estonian country code	3.4
3.0	09/01/2004	Review of the Slovenian algorithm after SI confirmation	3.11
4.0	13/01/2004	Review of the Czech algorithm	3.3
5.0	27/02/2004	Change in the Slovak algorithm	3.12
		Wrong ‘mod 10’ in the Dutch algorithm	2.13
		Review of the Czech algorithm due to the definition of the CEIL function	3.3
		Change in the British algorithm	2.9.2
5.1	02/03/2004	Mistake in SI sample VAT number	3.11
		Mistake in SK sample VAT number	3.12
6.0	09/03/2004	Change in SK algorithm: C3 is one of “2, 3, 4, 7, 8, 9”, instead of one of “3, 4, 7, 8, 9”	3.12
6.1	22/04/2004	Move countries acceding on 1/5/2004 from section 3 into section 2.	2, 3
		Missing “4*C5” term in “rules” of British algorithm	2.12.2
		Review of the Estonian algorithm due to the definition of the CEIL function. Sample reviewed.	2.7
		Review of FI algorithm.	2.10
		Review of ES sample.	2.9
7.0	03/05/2004	Change in the CZ algorithm	2.4.2, 2.4.4
7.1	18/08/2004	Add section 1.5	1
		Clarify “range” in DE algorithm	2.5
		Clarify “rules” in HU algorithm	2.13
7.2	26/11/2004	Review of DE sample	2.5
		Add a missing ‘modulo’ calculation in the ‘for’ loop in DE algorithm	2.5
		Clarify “rules” in HU algorithm	2.13
		Review “rules” for [C8 C9 C10] in IT algorithm	2.15

Version	Date	Description	Affected sections
8.0	27/01/2005	Update of the BE algorithm to take into account the new business numbers that will be valid from 01/04/2005 on.	2.2
		Clarification in the versioning rules of this document.	1.5
8.1	21/04/2006	Change C8 in C9 in rules, second column in EE algorithm.	2.7
		Add date format of the date in LV algorithm.	2.18.2
		Clarify range for DE: [C1 C2 C3 C4 C5 C6 C7 C8 C9] > 0	2.5
9.0	16/05/2006	C1 C2 cannot be 12 for CY.	2.3
		C1 only is greater than 0 for DE	2.5
		Update of the BG algorithms.	3.1
		Add a new sample in the RO algorithm.	3.2
9.1	22/11/2006	[C1 C2 C3 C4 C5 C6 C7 C8 C9] > 000000000 for GB.	2.12.2
		Change C9 in C10 in the BG sample for algorithm 3	3.1.3
		Change C9 in C10 in the BG sample for algorithm 4	3.1.4
		Add footnote in RO sample saying that “Fiscal Registration Code” is the VAT number without the check digit and update the first sample	3.2
10.0	16/03/2007	BG and RO are moved form Candidate Countries to Member States	3.1 becomes 2.3 and 3.2 becomes 2.24
		[C1 C2 C3] can now be from 000 to 009 for Isle of Man VAT numbers.	2.13.2
		[C8 C9 C10] = 888 is now valid for IT	2.16
11.0	09/10/2007	Only 10 digits BE VAT number are accepted. C1=1 is accepted as well.	Remove 2.2.1 Update 2.2
12.0	05/12/2007	EE VAT numbers must start with ‘10’	Update 2.8
		RO VAT numbers cannot start with ‘0’.	Update 2.24
13.0	23/05/2008	ES VAT Algorithm split up for juridical entities, physical persons and national juridical entities ES VAT Algorithm allows more characters	Update 2.10
14.0	11/07/2008	UK VAT Algorithm extension to achieve a new series of valid VAT numbers	Update 2.13
14.1	23/07/2008	UK allowed ranges of VAT numbers must be checked.	Update 2.13
15.0	24/06/2011	CZ VAT Algorithm update.	Update 2.5.4

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# 1 BACKGROUND

## 1.1 INTRODUCTION

In the past, the former VTC performed studies as to the most efficient methods of reducing network congestion over whichever network the VIES messages were to be sent. In addition to syntactic and semantic checks of the VIES message headers and bodies of both requests and replies, they also decided that a check on the construction of the VAT number to be validated could also be a useful feature, as a check prior to sending a request would stop any obviously invalid requests from being sent.

## 1.2 PERFORMANCE ISSUES

By allowing the MSA National applications to enable such a form of vat validation, significant performance boosts can be noticed. The possibility of verifying an invalid vat number because of the syntax of the number means that in cases where the network is unavailable for any reason, operators in each country are still able to continue making queries (although with limited possible responses).

## 1.3 APPLICATIVE ISSUES

All Member States and Candidate Countries are free to use the algorithms in the design and implementation of their national applications, although these algorithms are confidential, and on no account are they to be made available to the general public. It is essential that the implementation of these algorithms does not allow their content to be deciphered by a process of reverse engineering of any application.

## 1.4 SOURCE CODE REFERENCES

The source code containing the implementation of the different MSA algorithms are available for the Java, C and COBOL languages.

For 'Java', the VAT validation routines are within the Java package scope `cec.taxud.fiscalis.vies.common.vat`, which is maintained and updated by the FITSDEV2 project.

For 'C', the VAT validation routines are within the file "testvat.c" which is maintained and updated by the FITSDEV2 project.

For COBOL, the validation routines are held in the file "GUVETSMREGNO" which is temporarily being maintained and updated by the GB VIES team.

## 1.5 VERSIONING

The versioning of this document is based on major and minor numbers in the form *x.y*. Whenever a functional change is needed in an algorithm, and the new version of the algorithm becomes less restrictive than the previous one, the major number of this document is incremented. While an algorithm needs some clarifications, but without requiring any modification in the C or COBOL implementations, or when an algorithm becomes more restrictive the minor number of this document is incremented.

For example, if a country decides to extend the length of all its VAT numbers by prefixing them by one character, while still authorising the previous numbers the algorithm become less restrictive. This means that countries that are still using the previous version of the algorithm will "block" VAT numbers that are valid according to the new rules. In such a case, the major number of this document release number will be incremented.

The versioning of the C implementation, available in the source file `testvat.c`, is closely linked to the versioning of this document. It is based on a three digits number in the form *x.y.z*. The two first digits always refer to the version of this document that is implemented in the source code, while the last digit, i.e. *z*, is incremented for any modification in the source code, not linked to a modification of this document, e.g. maintenance release due to bug fixing. For example, version 6.1.1 of the C implementation implements release 6.1 of this document and is a maintenance release of version 6.1.0.

The version of the C implementation can always be found in any piece of software that includes it (i.e. source code, executable, library, etc.) via the Unix `'what'` command. For example, if `'viesquer'` is the name of an executable containing the C implementation, the command:

```
what viesquer | grep testvat.c
```

will return a line such as:

```
testvat.c 7.0.0 2004/05/03
```

meaning that:

- version 7.0 of this document is implemented and there was no maintenance release;
- the Java and C implementation were produced on 3<sup>rd</sup> May 2004.

The COBOL implementation follows its own versioning system.

## 1.6 REFERENCE AND APPLICABLE DOCUMENTS

### 1.6.1 Applicable documents

<b>AD1</b>	VIES Application Interface User Guide, Programming Guide for VIES on the Native CSI Stack, Reference: VIES-UG-050
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**Table 1 - Applicable documents**

### 1.6.2 Reference documents

<b>RD1</b>	VIES Application Interface User Guide: Message and File Format Definition Reference: VIES-UG-030
<b>RD2</b>	VIES Study Document: Study of VIES Performance Reference: VIES-STD-121
<b>RD3</b>	VIES Study Document: VAT Validation Routines Reference: VIES-STD-143(01)

**Table 2 - Reference documents**

## 1.7 TERMINOLOGY

### 1.7.1 Abbreviations and acronyms

<b>Acronym</b>	<b>Meaning</b>
<b>FITS</b>	Fiscalis Information Technology Services
<b>MS</b>	Member State
<b>MSA</b>	Member State Administration
<b>N/A</b>	Not applicable
<b>RDx</b>	Reference Document
<b>ADx</b>	Applicable Document
<b>VAT</b>	Value Added Tax
<b>VIES</b>	VAT Information Exchange System

**Table 3 - Abbreviations and acronyms**



## 2 MEMBER STATE SPECIFIC ALGORITHMS

The following sections provide the validation rules which can be incorporated into the MSA National applications for the testing of VAT number construction in the different MSAs.

### 2.1 AT – AUSTRIA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1	Alphabetic
	C2...C9	Numeric from 0 to 9
Rules:	C1	U
	C9	$(10 - (R + C2 + C4 + C6 + C8 + 4) \text{ modulo } 10) \text{ modulo } 10$ <p>Where:</p> $R = S3 + S5 + S7$ $Si = \text{INT}(Ci / 5) + (Ci * 2) \text{ modulo } 10$
Sample:	U10223006	<p>C1 = U</p> $S3 = \text{INT}(0/5) + (0*2) \text{ Modulo } 10 = 0$ $S5 = \text{INT}(2/5) + (2*2) \text{ Modulo } 10 = 4$ $S7 = \text{INT}(0/5) + (0*2) \text{ Modulo } 10 = 0$ $R = 0 + 4 + 0 = 4$ $C9 = (10 - (4 + 1 + 2 + 3 + 0 + 4) \text{ Modulo } 10) \text{ Modulo } 10$ $= 6$

## 2.2 BE – BELGIUM

VAT format:	[C0 C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C0 to C9 are digits.
Range:	C0	Always the digit '0'
	C1	Numeric from 1 to 9
	C2...C9	Numeric from 0 to 9
Rules:	[C8 C9]	$97 - ([C0\ C1\ C2\ C3\ C4\ C5\ C6\ C7] \text{ modulo } 97)$
Sample:	0776091951	$[C8\ C9]$ $= 97 - (07760919 \text{ modulo } 97)$ $= 97 - 46$ $= 51$

## 2.3 BG – BULGARIA

### 2.3.1 Format 1: 9 digits numbers for legal entities

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C9	Numeric
Rules:	C9	$A1 = 1 \cdot C1 + 2 \cdot C2 + 3 \cdot C3 + 4 \cdot C4 + 5 \cdot C5 + 6 \cdot C6 + 7 \cdot C7 + 8 \cdot C8$ $R1 = A1 \text{ modulo } 11$ <p>If <math>R1 = 10</math>, then</p> $A2 = 3 \cdot C1 + 4 \cdot C2 + 5 \cdot C3 + 6 \cdot C4 + 7 \cdot C5 + 8 \cdot C6 + 9 \cdot C7 + 10 \cdot C8$ $R2 = A2 \text{ modulo } 11$ <p>If <math>R2 = 10</math> then <math>R = 0</math></p> <p>Else <math>R = R2</math></p> <p>Else <math>R = R1</math></p> $C9 = R$
Sample:	101004508	$A1 = 1 \cdot 1 + 2 \cdot 0 + 3 \cdot 1 + 4 \cdot 0 + 5 \cdot 0 + 6 \cdot 4 + 7 \cdot 5 + 8 \cdot 0 = 63$ $R1 = 63 \text{ modulo } 11 = 8$ $R = 8$ $C9 = 8$

### 2.3.2 Format 2: 10 digits numbers Bulgarian physical persons

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
Rules:	C10	<p>C1 C2: year of birth, Range 00:99</p> <p>C3 C4: the month of birth; Range:</p> <ul style="list-style-type: none"> <li>01:12 for the persons born between 1900 and 1999</li> <li>01+20:12+20 persons born before 1900</li> </ul>

		<ul style="list-style-type: none"> <li>01+40:12+40 persons born after 1999</li> </ul> <p>C5 C6: date of birth; Range:</p> <ul style="list-style-type: none"> <li>01-29 for February (month 02)</li> <li>01-30 for April, June, September and November (months 04,06,09,11)</li> <li>01-31 for January, March, May, July, August, October and December (months 01,03,05,07,08,10,12)</li> </ul> $A1 = 2 \cdot C1 + 4 \cdot C2 + 8 \cdot C3 + 5 \cdot C4 + 10 \cdot C5 + 9 \cdot C6 + 7 \cdot C7 + 3 \cdot C8 + 6 \cdot C9$ <p><math>R1 = A1 \text{ modulo } 11</math></p> <p>If <math>R1 = 10</math>, then <math>R = 0</math></p> <p>Else <math>R = R1</math></p> <p><math>C10 = R</math></p>
Sample:	0041010002	$A1 = 2 \cdot 0 + 4 \cdot 0 + 8 \cdot 4 + 5 \cdot 1 + 10 \cdot 0 + 9 \cdot 1 + 7 \cdot 0 + 3 \cdot 0 + 6 \cdot 0 = 46$ <p><math>R1 = 46 \text{ modulo } 11 = 2</math></p> <p><math>R = 2</math></p> <p><math>C10 = 2</math></p>

### 2.3.3 Format 3: 10 digits numbers for foreigners

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
Rules:	C10	$A1 = 21 \cdot C1 + 19 \cdot C2 + 17 \cdot C3 + 13 \cdot C4 + 11 \cdot C5 + 9 \cdot C6 + 7 \cdot C7 + 3 \cdot C8 + 1 \cdot C9$ <p><math>R = A1 \text{ modulo } 10</math></p> <p><math>C10 = R</math></p>
Sample:	0000100159	$A1 = 21 \cdot 0 + 19 \cdot 0 + 17 \cdot 0 + 13 \cdot 0 + 11 \cdot 1 + 9 \cdot 0 + 7 \cdot 0 + 3 \cdot 1 + 1 \cdot 5 = 19$

		$R1 = 19 \text{ modulo } 10 = 9$  $R = 9$  $C10 = 9$
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### **2.3.4 Format 4: 10 digits numbers for entities not covered by the above three categories**

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
Rules:	C10	$A1 = 4*C1 + 3*C2 + 2*C3 + 7*C4 + 6*C5 + 5*C6 + 4*C7 + 3*C8 + 2*C9$  $R1 = 11 - A1 \text{ modulo } 11$ If $R1 = 11$ , then $R = 0$ Else If $R1 = 10$ , then the number is invalid Else $R = R1$  $C10 = R$
Sample:	0000100153	$A1 = 4*0 + 3*0 + 2*0 + 7*0 + 6*1 + 5*0 + 4*0 + 3*1 + 2*5 = 19$  $R1 = 11 - 19 \text{ modulo } 11 = 3$  $R = 3$  $C10 = 3$

**2.4 CY – CYPRUS**

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C8	Numeric
	C9	Alphabetic
	C1	0, 1, 3, 4, 5 OR 9
Rules:	C1 C2	C1C2 cannot be 12 (e.g. 12000139V is invalid)

	C9	<p>C9 = a letter of the Latin alphabet calculated as follows:</p> <p>A numeric value is associated to each one previous eight digits according to its position:</p> <p>Even position digits (C2, C4, C6, C8) retain same value</p> <p>Correspondence table for odd position digits (C1, C3, C5, C7) :</p> <table> <tr><td>0</td><td>⇒</td><td>1</td></tr> <tr><td>1</td><td>⇒</td><td>0</td></tr> <tr><td>2</td><td>⇒</td><td>5</td></tr> <tr><td>3</td><td>⇒</td><td>7</td></tr> <tr><td>4</td><td>⇒</td><td>9</td></tr> <tr><td>5</td><td>⇒</td><td>13</td></tr> <tr><td>6</td><td>⇒</td><td>15</td></tr> <tr><td>7</td><td>⇒</td><td>17</td></tr> <tr><td>8</td><td>⇒</td><td>19</td></tr> <tr><td>9</td><td>⇒</td><td>21</td></tr> </table> <p><math>A1 = C1 + C2 + C3 + C4 + C5 + C6 + C7 + C8</math></p> <p><math>R = A1 \text{ modulo } 26</math></p> <p>R is changed into an alphabetical character depending on its value, as follows:</p> <table> <tr><td>0</td><td>⇒</td><td>A</td></tr> <tr><td>1</td><td>⇒</td><td>B</td></tr> <tr><td>2</td><td>⇒</td><td>C</td></tr> <tr><td>3</td><td>⇒</td><td>D</td></tr> <tr><td>4</td><td>⇒</td><td>E</td></tr> <tr><td>5</td><td>⇒</td><td>F</td></tr> <tr><td>6</td><td>⇒</td><td>G</td></tr> <tr><td>7</td><td>⇒</td><td>H</td></tr> <tr><td>8</td><td>⇒</td><td>I</td></tr> <tr><td>9</td><td>⇒</td><td>J</td></tr> <tr><td>10</td><td>⇒</td><td>K</td></tr> <tr><td>11</td><td>⇒</td><td>L</td></tr> <tr><td>12</td><td>⇒</td><td>M</td></tr> <tr><td>13</td><td>⇒</td><td>N</td></tr> <tr><td>14</td><td>⇒</td><td>O</td></tr> <tr><td>15</td><td>⇒</td><td>P</td></tr> <tr><td>16</td><td>⇒</td><td>Q</td></tr> <tr><td>17</td><td>⇒</td><td>R</td></tr> <tr><td>18</td><td>⇒</td><td>S</td></tr> <tr><td>19</td><td>⇒</td><td>T</td></tr> <tr><td>20</td><td>⇒</td><td>U</td></tr> <tr><td>21</td><td>⇒</td><td>V</td></tr> <tr><td>22</td><td>⇒</td><td>W</td></tr> <tr><td>23</td><td>⇒</td><td>X</td></tr> <tr><td>24</td><td>⇒</td><td>Y</td></tr> <tr><td>25</td><td>⇒</td><td>Z</td></tr> </table> <p>C9 = new value of R</p>	0	⇒	1	1	⇒	0	2	⇒	5	3	⇒	7	4	⇒	9	5	⇒	13	6	⇒	15	7	⇒	17	8	⇒	19	9	⇒	21	0	⇒	A	1	⇒	B	2	⇒	C	3	⇒	D	4	⇒	E	5	⇒	F	6	⇒	G	7	⇒	H	8	⇒	I	9	⇒	J	10	⇒	K	11	⇒	L	12	⇒	M	13	⇒	N	14	⇒	O	15	⇒	P	16	⇒	Q	17	⇒	R	18	⇒	S	19	⇒	T	20	⇒	U	21	⇒	V	22	⇒	W	23	⇒	X	24	⇒	Y	25	⇒	Z
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Sample:	00532445O	$C1 = 0 \Rightarrow 1$ $C2 = 0 \Rightarrow 0$ $C3 = 5 \Rightarrow 13$ $C4 = 3 \Rightarrow 3$ $C5 = 2 \Rightarrow 5$ $C6 = 4 \Rightarrow 4$ $C7 = 4 \Rightarrow 9$ $C8 = 5 \Rightarrow 5$  $A1 = 1 + 0 + 13 + 3 + 5 + 4 + 9 + 5 = 40$  $R = 40 \text{ modulo } 26 = 14$  Following correspondence table here above, R becomes 'O'.  $C9 = O$
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## 2.5 CZ – CZECH REPUBLIC

Czech VAT numbers have a length of 8, 9 or 10 digits, as confirmed at the SCAC meeting on 1<sup>st</sup> December 2003.

### 2.5.1 Format 1: 8 digits numbers – Legal Entities

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits.
Range:	C1...C8	Numeric
	C1	$\leq 9$
Rules:	C8	$A1 = 8 \cdot C1 + 7 \cdot C2 + 6 \cdot C3 + 5 \cdot C4 + 4 \cdot C5 + 3 \cdot C6 + 2 \cdot C7$ <p>A2= nearest higher multiple of 11</p> <p><math>\Rightarrow</math> if <math>A1 \bmod 11 = 0</math>  then  <math>A2 = A1 + 11</math>  else  <math>A2 = \text{CEIL}^1(A1/11, 1) * 11</math></p> <p><math>D = A2 - A1</math></p> <p><math>C8 = D \bmod 10</math></p>
Sample:	46505334	$A1 = 8 \cdot 4 + 7 \cdot 6 + 6 \cdot 5 + 5 \cdot 0 + 4 \cdot 5 + 3 \cdot 3 + 2 \cdot 3 = 139$ <p><math>A1 \bmod 11 \neq 0</math>  <math>\Rightarrow A2 = \text{CEIL}(139/11, 1) * 11 = 143</math></p> <p><math>D = 143 - 139 = 4</math></p> <p><math>C8 = 4</math></p>

<sup>1</sup>  $\text{CEIL}(x)$  is defined by the ISO as being the smallest integral value not less than x. Hence, if y is divisible by 11,  $\text{CEIL}(y/11) * 11$  will not return the nearest higher multiple of 11, but y itself.

## 2.5.2 Format 2: 9 digits numbers – Individuals

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C9	Numeric
		Represents a date of birth of an individual
Rules:	C1 C2	Year of birth. Must be in the range 00-53
	C3 C4	Month of birth, $\geq 1$ and $\leq 12$ for men or $\geq 51$ and $\leq 62$ for women
	C5 C6	Day of birth $\geq 1$ and $\leq 31$ depending on value of C3 C4
Sample:	395601439	Correspond to a woman born on the 1 <sup>st</sup> of June 1939.

### 2.5.3 Format 3: 9 digits numbers – Individuals (Special cases)

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C9	Numeric
	C1	= 6
Rules:	C9	<div>A1 = 8*C2 + 7*C3 + 6*C4 + 5*C5 + 4*C6 + 3*C7 + 2*C8</div> <div>A2= nearest higher multiple of 11</div> <div>⇒ if A1 mod 11 = 0</div> <div>then</div> <div>A2= A1 + 11</div> <div>else</div> <div>A2 = CEIL<sup>2</sup>(A1/11, 1) * 11</div> <div>D = A2 -A1</div> <div>C9 depends on the difference according to the following table:</div> <div><div>D ⇒ C9</div><div>1 ⇒ 8</div><div>2 ⇒ 7</div><div>3 ⇒ 6</div><div>4 ⇒ 5</div><div>5 ⇒ 4</div><div>6 ⇒ 3</div><div>7 ⇒ 2</div><div>8 ⇒ 1</div><div>9 ⇒ 0</div><div>10 ⇒ 9</div><div>11 ⇒ 8</div></div>
Sample:	640903926	<div>A1 = 8*4 + 7*0 + 6*9 + 5*0 + 4*3 + 3*9 + 2*2 = 129</div> <div>A1 mod 11 &lt;&gt; 0</div> <div>⇒ A2 = CEIL(129/11, 1) * 11 = 132</div> <div>D = 132 - 129 = 3</div> <div>⇒ C9 = 6</div>

<sup>2</sup> See remark about CEIL in "Format 1: 8 digits numbers -- Legal Entity"

## 2.5.4 Format 4: 10 digits numbers – Individuals

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
	C1 C2 C3 C4 C5 C6	Represents a date of birth of an individual
Rules:	C1 C2 C3 C4 C5 C6 C7 C8 C9 C10	The number represented by C1C2C3C4C5C6C7C8C9C10 must be divided by 11 without remainder.
	C1 C2	Year of birth.  Must be in the range 00-[ <i>last two digits of current date year</i> ] or 54-99
	C3 C4	Month of birth, ≥ 1 and ≤ 12 for men or ≥ 21 and ≤ 32 for men or ≥ 51 and ≤ 62 for women or ≥ 71 and ≤ 82 for women
	C5 C6	Day of birth  ≥ 1 and ≤ 31 depending on value of C3 C4
	C10	$A1 = C1C2 + C3C4 + C5C6 + C7C8 + C9C10$  A1 must be divisible by 11 with no remainder.
Sample:	7103192745	Corresponding date = 19/03/1971.  $A1 = 71 + 03 + 19 + 27 + 45 = 165$  $165 / 11 = 15$  $7103192745 / 11 = 645744795$

## 2.6 DE – GERMANY

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C9	Numeric
	C1	> 0
Rules:	An interactive procedure involving each of the digits C1...C8 in turn used to calculate C9.	<p>P = 10</p> <p>For N = 1...8 (N = character position i.e. C1)</p> <p>S = CN + P</p> <p>M = S modulo 10</p> <p>If M = 0 then M = 10</p> <p>P = (2*M) modulo 11</p> <p>R = 11 – P</p> <p>If R = 10</p> <p>then</p> <p>C9 = 0</p> <p>else</p> <p>C9 = R</p>

Sample:	111111125	<p><math>P = 10</math></p> <p> <math>S = 1 + 10 = 11</math> (C1)  <math>M = 11 \text{ modulo } 10 = 1</math>  <math>P = (2*1) \text{ modulo } 11 = 2</math> </p> <p> <math>S = 1 + 2 = 3</math> (C2)  <math>M = 3 \text{ modulo } 10 = 3</math>  <math>P = (2*3) \text{ modulo } 11 = 6</math> </p> <p> <math>S = 1 + 6 = 7</math> (C3)  <math>S = 7 \text{ modulo } 10 = 7</math>  <math>P = (2*7) \text{ modulo } 11 = 3</math> </p> <p> <math>S = 1 + 3 = 4</math> (C4)  <math>M = 4 \text{ modulo } 10 = 4</math>  <math>P = (2*4) \text{ modulo } 11 = 8</math> </p> <p> <math>S = 1 + 8 = 9</math> (C5)  <math>M = 9 \text{ modulo } 10 = 9</math>  <math>P = (2*9) \text{ modulo } 11 = 7</math> </p> <p> <math>S = 1 + 7 = 8</math> (C6)  <math>M = 8 \text{ modulo } 10 = 8</math>  <math>P = (2*8) \text{ modulo } 11 = 5</math> </p> <p> <math>S = 1 + 5 = 6</math> (C7)  <math>M = 6 \text{ modulo } 10 = 6</math>  <math>P = (2*6) \text{ modulo } 11 = 1</math> </p> <p> <math>S = 2 + 1 = 3</math> (C8)  <math>S = 3 \text{ modulo } 10 = 3</math>  <math>P = (2*3) \text{ modulo } 11 = 6</math> </p> <p> <math>R = 11 - P</math> (C9)  <math>= 11 - 6</math>  <math>= 5</math> </p>
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## 2.7 DK – DENMARK

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits.
Range:	C1	Numeric > 0
Rules:	R	$= (2 \cdot C1 + 7 \cdot C2 + 6 \cdot C3 + 5 \cdot C4 + 4 \cdot C5 + 3 \cdot C6 + 2 \cdot C7 + C8)$ R is divisible by 11
Sample:	88146328	$R = (2 \cdot 8 + 7 \cdot 8 + 6 \cdot 1 + 5 \cdot 4 + 4 \cdot 6 + 3 \cdot 3 + 2 \cdot 2 + 8)$ $R = (16 + 56 + 6 + 20 + 24 + 9 + 4 + 8) = 143$ 143 is divisible by 11 to get 13

## 2.8 EE – ESTONIA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits. $C1C2=10$
Range:	C1...C9	Numeric
Rules:	C9	$A1 = 3*C1 + 7*C2 + 1*C3 + 3*C4 + 7*C5 + 1*C6 + 3*C7 + 7*C8$ $A2 = \text{CEIL}(A1;10)$ $C9 = A2 - A1$
Sample:	100207415	$A1 = 3*1 + 7*0 + 1*0 + 3*2 + 7*0 + 1*7 + 3*4 + 7*1 = 35$ $A2 = \text{CEIL}(35;10) = 40$ $C9 = 40 - 35 = 5$



## 2.9 EL – GREECE

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits
Range:	C1...C9	Numeric from 0 to 9
Rules	C9	$= A2 \text{ modulo } 10$ $A2 = A1 \text{ modulo } 11$ $A1 = 256 * C1 + 128 * C2 + 64 * C3 + 32 * C4 + 16 * C5 + 8 * C6 + 4 * C7 + 2 * C8$
Sample	040127797	$A1 = 256 * 0 + 128 * 4 + 64 * 0 + 32 * 1 + 16 * 2 + 8 * 7 + 4 * 7 + 2 * 9 = 678$ $A2 = 678 \text{ modulo } 11 = 7$ $C9 = A2 \text{ modulo } 10 = 7$

## 2.10 ES – SPAIN

VAT format	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits
Range	C1, C9	Alphanumeric from 0 to 9 or A to Z
	C2...C8	Numeric from 0 to 9
Rules	C1	<p>IF C9 Alphabetic then:  C1 = A, B, C, D, E, F, G, H, K, L, M, N, P, Q, R, S, W, X, Y, Z or numeric from 0 to 9</p> <p>IF C9 Numeric then:  C1 = A, B, C, D, E, F, G, H, J, U, V</p>
	C9	<p><b>Juridical entities other than national ones:</b></p> <p>A) IF C9 Alphabetic and C1 = A, B, C, D, E, F, G, H, N, P, Q, R, S, W then  <math>S1 = C3 + C5 + C7</math>  <math>S2 = D2 + D4 + D6 + D8</math>, where <math>D_i = \text{int}(C_i/5) + (2 * C_i) \text{ modulo } 10</math>  <math>R = 10 - (S1 + S2) \text{ modulo } 10</math>  C9 = Check Character(R)  Check Character: 1-A, 2-B, 3-C, 4-D, 5-E, 6-F, 7-G, 8-H, 9-I, 10-J</p> <p><b>Physical persons:</b></p> <p>B) IF C9 Alphabetic and C1= K, L, M, X, Y, Z or numeric  If C1 = Y then set C1 = 1  If C1 = Z then set C1 = 2  If C1 numeric then <math>R = ([C1 C2 C3 C4 C5 C6 C7 C8]) \text{ modulo } 23 + 1</math>  If C1 alphabetic then <math>R = ([C2 C3 C4 C5 C6 C7 C8]) \text{ modulo } 23 + 1</math>  C9 = Check Character(R)  Check Character: 1-T, 2-R, 3-W, 4-A, 5-G, 6-M, 7-Y, 8-F, 9-P, 10-D, 11-X, 12-B, 13-N, 14-J, 15-Z, 16-S, 17-Q, 18-V, 19-H, 20-L, 21-C, 22-K, 23-E</p> <p><b>National juridical entities:</b></p> <p>C) If C9 numeric  <math>S1 = C3 + C5 + C7</math>  <math>S2 = D2 + D4 + D6 + D8</math>, where <math>D_i = \text{int}(C_i/5) + (2 * C_i) \text{ modulo } 10</math>  <math>R = 10 - (S1 + S2) \text{ modulo } 10</math>  C9 = (R) modulo 10</p>

Sample	A0011012B	<p>C9 = B and C1 = A then, case A)</p> <p><math>S1 = 0 + 1 + 1 = 2</math></p> <p><math>S2 = 2*0 + 2*1 + 2*0 + 2*2 = 6</math></p> <p><math>R = 10 - (2+6)\text{modulo}10 = 2</math></p> <p>C9= Check Character(2) = B</p> <p>C9 = B</p>
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## 2.11 FI – FINLAND

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits
Range:	C1...C8	Numeric from 0 to 9
Rules	C8	$R = 11 - (7 \cdot C1 + 9 \cdot C2 + 10 \cdot C3 + 5 \cdot C4 + 8 \cdot C5 + 4 \cdot C6 + 2 \cdot C7) \text{ modulo } 11$  If $R = 10$ then, VAT number is invalid  If $R = 11$ then $C8 = 0$  Else $C8 = R$
Sample	09853608	$R = 11 - (7 \cdot 0 + 9 \cdot 9 + 10 \cdot 8 + 5 \cdot 5 + 8 \cdot 3 + 4 \cdot 6 + 2 \cdot 0) \text{ modulo } 11$  $= 11 - (0 + 81 + 80 + 25 + 24 + 24 + 0) \text{ modulo } 11$  $= 11 - (234) \text{ modulo } 11$  $= 11 - 3$  $C8 = R = 8$

## 2.12 FR – FRANCE

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11]	Where C1 to C9 are digits.
Range:	C1...C2	Alphanumeric from A to Z or 0 to 9
	C3...C11	Numeric from 0 to 9
Rules:	Case 1: Old Style  [C1 C2]	  [C1 C2] = ([C3 C4 C5 C6 C7 C8 C9 C10 C11] [1 2])modulo 97
	Case 2 : New Style  C1 C2	<p>S1 = Check Character (C1)</p> <p>S2 = Check Character (C2)</p> <p>If C1 numeric then</p> <p>C2 alphabetic</p> <p><math>S = (S1 * 24) + (S2 - 10)</math></p> <p>IF C1 alphabetic then</p> <p><math>S = (S1 * 34) + (S2 - 100)</math></p> <p><math>P = (S / 11) + 1</math></p> <p><math>R1 = (S) \text{ modulo } 11</math></p> <p><math>R2 = ([C3 C4 C5 C6 C7 C8 C9 C10 C11] + P) \text{ modulo } 11</math></p> <p><math>R1 = R2</math></p> <p>Check Character</p> <p>0-0, 1-1, 2-2, 3-3, 4-4, 5-5, 6-6, 7-7, 8-8, 9-9, 10-A, 11-B, 12-C, 13-D, 14-E, 15-F, 16-G, 17-H, 18-J, 19-K, 20-L, 21-M, 22-N, 23-P, 24-Q, 25-R, 26-S, 27-T, 28-U, 29-V, 30-W, 31-X, 32-Y, 33-Z.</p>
Sample:	00300076965	[C1 C2] = (30007696512)modulo97= 00

## 2.13 GB – UNITED KINGDOM

### 2.13.1 Format 1

This format applies to Government departments and Health authorities:

VAT format:	[C1 C2 C3 C4 C5]	Where C1 to C5 are digits
Range:	[C1 C2]	Alpha: “GD” or “HA”
	C3...C5	Numeric from 0 to 9
Rules:	if [C1 C2] = “GD”	[C3 C4 C5] from 000 to 499
	If [C1 C2] = “HA”	[C3 C4 C5] from 500 to 999

### 2.13.2 Format 2

This format applies to all others:

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits
	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12] for Branches	Where C10 C11 C12 are digits
Range:	[C1 C2 C3 C4 C5 C6 C7]	MOD97 (R1): Not in 0100000...0999999 Not in 9490001...9700000 Not in 9990001...9999999  MOD9755 (R2): Not in 0000001...0100000 Not in 0100001...1000000
	[C1 C2 C3]	from 000 to 009 are numbers for Isle of Man
	[C10 C11 C12]	>000
	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	>000000000
Rules	[C8 C9]	$R1 = (8 \cdot C1 + 7 \cdot C2 + 6 \cdot C3 + 5 \cdot C4 + 4 \cdot C5 + 3 \cdot C6 + 2 \cdot C7 + C8C9) \text{ modulo } 97$ $R2 = ((8 \cdot C1 + 7 \cdot C2 + 6 \cdot C3 + 5 \cdot C4 + 4 \cdot C5 + 3 \cdot C6 + 2 \cdot C7 + C8C9) + 55) \text{ modulo } 97$ <p>Either R1 or R2 must equal to zero.</p>

Sample	434031494	$R1 = (8*4 + 7*3 + 6*4 + 5*0 + 4*3 + 3*1 + 2*4 + 94) \text{ modulo } 97$ $= (32 + 21 + 24 + 0 + 12 + 3 + 8 + 94) \text{ modulo } 97$ $= 194 \text{ modulo } 97 = 0$ $R2 = ((8*4 + 7*3 + 6*4 + 5*0 + 4*3 + 3*1 + 2*4 + 94) + 55) \text{ modulo } 97$ $= ((32 + 21 + 24 + 0 + 12 + 3 + 8 + 94) + 55) \text{ modulo } 97$ $= (194 + 55) \text{ modulo } 97 = 55$ <p>R1 equals to zero and R2 equals to 55 and therefore one result equals to zero and therefore the VAT number is syntactically correct. The VAT number does not fall into the restricted range of MOD97 (R1) and is therefore valid.</p>
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## 2.14 HU – HUNGARY

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 and C8 are digits.
Range:	C1...C8	Numeric
Rules:	C8	$A1 = 9 * C1 + 7 * C2 + 3 * C3 + 1 * C4 + 9 * C5 + 7 * C6 + 3 * C7$  If the number in the right hand column of A1 is zero then $C8 = 0$  Otherwise, subtract the number in the right hand column of A1 from 10  $C8 = A1$
Sample:	<p>21376414</p> <p>10597190</p>	$A1 = 9 * 2 + 7 * 1 + 3 * 3 + 1 * 7 + 9 * 6 + 7 * 4 + 3 * 1 = 126$  Number in the right hand column of A1 = 6  $C8 = 10 - 6 = 4$  $A1 = 1 * 9 + 0 * 7 + 5 * 3 + 9 * 1 + 7 * 9 + 1 * 7 + 9 * 3 = 130$  Number in the right hand column of A1 = 0  $C8 = 0$



## 2.15 IE – IRELAND

### 2.15.1 Old Style

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits
Range	C1, C3...C7 C2 C8	Numeric from 0 to 9 Alphabetic from A to Z, '+' or '*' Alphabetic from A to W
Rules	C8	$N = [N1\ N2\ N3\ N4\ N5\ N6\ N7] =$ $[0\ C3\ C4\ C5\ C6\ C7\ C1]$ $R = (N1*8 + N2*7 + N3*6 + N4*5 + N5*4 + N6*3 + N7*2) \text{ modulo } 23$ $C8 = \text{Check Character}(R)$ <p>Check Character:</p> <p>0-W, 1-A, 2-B, 3-C, 4-D, 5-E, 6-F, 7-G, 8-H, 9-I, 10-J, 11-K, 12-L, 13-M, 14-N, 15-O, 16-P, 17-Q, 18-R, 19-S, 20-T, 21-U, 22-V</p>
Sample	8Z49289F	$N = 0492898$ $R = (0*8 + 4*7 + 9*6 + 2*5 + 8*4 + 9*3 + 8*2) \text{ modulo } 23$ $R = (0 + 28 + 54 + 10 + 32 + 27 + 16) \text{ modulo } 23$ $R = 6$ $C8 = \text{Check Character}(6) = F$

### 2.15.2 New Style

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits
Range	C1...C7 C8	Numeric from 0 to 9 Alphabetic from A to W
Rules	C8	$R = (C1*8 + C2*7 + C3*6 + C4*5 + C5*4 + C6*3 + C7*2) \text{ modulo } 23$ <p>C8 = Check Character(R)</p> <p>Check Character:</p> <p>0-W, 1-A, 2-B, 3-C, 4-D, 5-E, 6-F, 7-G, 8-H, 9-I, 10-J, 11-K, 12-L, 13-M, 14-N, 15-O, 16-P, 17-Q, 18-R, 19-S, 20-T, 21-U, 22-V</p>
Sample	3628739L	$R = (3*8 + 6*7 + 2*6 + 8*5 + 7*4 + 3*3 + 9*2) \text{ modulo } 23$ <p>R=12</p> <p>C8 = Check Character(11) = L</p>

## 2.16 IT – ITALY

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11]	Where C1 to C11 are digits
Range	C1...C11	Numeric from 0 to 9
Rules	[C8 C9 C10]	(>000 and <101) or (=120) or (=121) or (=999) or (=888)
	C11	$S1 = C1 + C3 + C5 + C7 + C9$ $S2 = D2 + D4 + D6 + D8 + D10$ $\text{where } Di = \text{int}(Ci/5) + (2 * Ci) \text{ modulo } 10$ $C11 = (10 - (S1 + S2) \text{ modulo } 10) \text{ modulo } 10$
Sample	00000010215	<p>[C8 C9 C10] = 021 &gt; 0 and 021 &lt; 151</p> $S1 = 0 + 0 + 0 + 1 + 2 = 3$ $D2 = \text{int}(C2/5) + (2 * C2) \text{ modulo } 10$ $D2 = 0 + 0 \text{ modulo } 10$ $D2 = 0$ $D4 = 0$ $D6 = 0$ $D8 = 0$ $D10 = \text{int}(C10/5) + (2 * C10) \text{ modulo } 10$ $= \text{int}(1/5) + (2 * 1) \text{ modulo } 10$ $= 0 + 2$ $= 2$ $S2 = 0 + 0 + 0 + 0 + 2 = 2$ $C11 = (10 - (3 + 2) \text{ modulo } 10) \text{ modulo } 10 =$ $C11 = ((10 - (5) \text{ modulo } 10)) \text{ modulo } 10$ $C11 = (10 - 5) \text{ modulo } 10$ $C11 = (5) \text{ modulo } 10$ $C11 = 5$

## 2.17 LT – LITHUANIA

### 2.17.1 Format 1: Legal persons

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are digits.
Range:	C1...C9	Numeric
	C8	= 1
Rules:	C9	$A1 = 1 \cdot C1 + 2 \cdot C2 + 3 \cdot C3 + 4 \cdot C4 + 5 \cdot C5 + 6 \cdot C6 + 7 \cdot C7 + 8 \cdot C8$ $R1 = A1 \text{ modulo } 11$ <p>If <math>R1 &lt; 10</math>, then <math>C9 = R1</math> Else</p> $A2 = 3 \cdot C1 + 4 \cdot C2 + 5 \cdot C3 + 6 \cdot C4 + 7 \cdot C5 + 8 \cdot C6 + 9 \cdot C7 + 1 \cdot C8$ $R2 = A2 \text{ modulo } 11$ <p>If <math>R2 = 10</math>, then <math>C9 = 0</math> Else <math>C9 = R2</math></p>
Sample:	213179412	$A1 = 1 \cdot 2 + 2 \cdot 1 + 3 \cdot 3 + 4 \cdot 1 + 5 \cdot 7 + 6 \cdot 9 + 7 \cdot 4 + 8 \cdot 1 = 142$ $R1 = 142 \text{ modulo } 11 = 10$ $A2 = 3 \cdot 2 + 4 \cdot 1 + 5 \cdot 3 + 6 \cdot 1 + 7 \cdot 7 + 8 \cdot 9 + 9 \cdot 4 + 1 \cdot 1 = 189$ $R2 = 189 \text{ modulo } 11 = 2$ $C9 = 2$

## 2.17.2 Format 2: Temporarily Registered Taxpayers

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12]	Where C1 to C12 are digits.
Range:	C1...C12	Numeric
	C11	= 1
Rules:	C12	$A1 = 1 \cdot C1 + 2 \cdot C2 + 3 \cdot C3 + 4 \cdot C4 + 5 \cdot C5 + 6 \cdot C6 + 7 \cdot C7 + 8 \cdot C8 + 9 \cdot C9 + 1 \cdot C10 + 2 \cdot C11$ $R1 = A1 \text{ modulo } 11$ <p>If <math>R1 \neq 10</math>, then <math>C12 = R1</math> Else</p> $A2 = 3 \cdot C1 + 4 \cdot C2 + 5 \cdot C3 + 6 \cdot C4 + 7 \cdot C5 + 8 \cdot C6 + 9 \cdot C7 + 1 \cdot C8 + 2 \cdot C9 + 3 \cdot C10 + 4 \cdot C11$ $R2 = A2 \text{ modulo } 11$ <p>If <math>R2 = 10</math>, then <math>C12 = 0</math> Else <math>C12 = R2</math></p>
Sample:	290061371314	$A1 = 1 \cdot 2 + 2 \cdot 9 + 3 \cdot 0 + 4 \cdot 0 + 5 \cdot 6 + 6 \cdot 1 + 7 \cdot 3 + 8 \cdot 7 + 9 \cdot 1 + 1 \cdot 3 + 2 \cdot 1 = 147$ $R1 = 147 \text{ modulo } 11 = 4$ $C12 = 4$

## 2.18 LU – LUXEMBOURG

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits
Range	C1...C8	Numeric from 0 to 9
Rules	[C7 C8]	= ([C1 C2 C3 C4 C5 C6]) Modulo 89
Sample	10000356	[C7 C8] = (100003)modulo89 = 56

## 2.19 LV – LATVIA

### 2.19.1 Format 1: Legal persons

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11]	Where C1 to C11 are digits.
Range:	C1...C11	Numeric
	C1	> 3
Rules:	C11	$A1 = 9 \cdot C1 + 1 \cdot C2 + 4 \cdot C3 + 8 \cdot C4 + 3 \cdot C5 + 10 \cdot C6 + 2 \cdot C7 + 5 \cdot C8 + 7 \cdot C9 + 6 \cdot C10$ $R = 3 - (A1 \text{ modulo } 11)$ <p>If <math>R &lt; -1</math>, then <math>C11 = R + 11</math></p> <p>If <math>R &gt; -1</math>, then <math>C11 = R</math></p> <p>If <math>R = -1</math>, then VAT number is invalid</p>
Sample:	40003009497	$A1 = 9 \cdot 4 + 1 \cdot 0 + 4 \cdot 0 + 8 \cdot 0 + 3 \cdot 3 + 10 \cdot 0 + 2 \cdot 0 + 5 \cdot 9 + 7 \cdot 4 + 6 \cdot 9 = 172$ $R = 3 - (172 \text{ modulo } 11) = 3 - 7 = -4$ $C11 = -4 + 11 = 7$

### 2.19.2 Format 2: Natural persons

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11]	Where C1 to C11 are digits.
Range:	C1...C11	Numeric
	C1	< 4
Rules:	C1...C6	Must correspond to a valid date of birth in the form DDMMYY
	C7...C11	Cannot be validated as this cannot be disclosed to third parties
Sample:	07091910933	Corresponds to date : 07 <sup>th</sup> of September 1919

## 2.20 MT – MALTA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits.
Range:	C1...C8	Numeric
	C1...C6	> 100000
Rules:	[C7 C8]	$A1 = 3 \cdot C1 + 4 \cdot C2 + 6 \cdot C3 + 7 \cdot C4 + 8 \cdot C5 + 9 \cdot C6$ $R = 37 - (A1 \text{ modulo } 37)$ <p>If R = 00, then C7 C8 = 37</p> $C7 \ C8 = R$
Sample:	15121333	$A1 = 3 \cdot 1 + 4 \cdot 5 + 6 \cdot 1 + 7 \cdot 2 + 8 \cdot 1 + 9 \cdot 3$ $= 78$ $R = 37 - (78 \text{ modulo } 37) = 33$ $C7 \ C8 = 33$



## 2.21 NL – NETHERLANDS

VAT format	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12]	Where C1 to C12 are digits
Range	C1... C9	Numeric from 0 to 9
	C10	Alphabetic "B"
	C11...C12	Numeric from 0 to 9
Rules	C9	$A1 = C1*9 + C2*8 + C3*7 + C4*6 + C5*5 + C6*4 + C7*3 + C8*2$ $A2 = A1 \text{ modulo } 11$ <p>If <math>A2 = 10</math> then number is invalid else <math>C9 = A2</math></p>
	[C11 C12]	>00
Sample	010000446B01	$A1 = 0*9 + 1*8 + 0*7 + 0*6 + 0*5 + 0*4 + 4*3 + 4*2 = 28$ $A2 = 28 \text{ modulo } 11 = 6$ $A2 \neq 10 \text{ and } A2 = C9$

## 2.22 PL – POLAND

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
Rules:	C10	$A1 = 6 \cdot C1 + 5 \cdot C2 + 7 \cdot C3 + 2 \cdot C4 + 3 \cdot C5 + 4 \cdot C6 + 5 \cdot C7 + 6 \cdot C8 + 7 \cdot C9$  $R = A1 \text{ modulo } 11$  If $R = 10$ , then VAT number is invalid  $C10 = R$
Sample:	5260001246	$A1 = 6 \cdot 5 + 5 \cdot 2 + 7 \cdot 6 + 2 \cdot 0 + 3 \cdot 0 + 4 \cdot 0 + 5 \cdot 1 + 6 \cdot 2 + 7 \cdot 4 = 127$  $R = 127 \text{ modulo } 11 = 6$  $C10 = 6$

## 2.23 PT – PORTUGAL

VAT format	[C1 C2 C3 C4 C5 C6 C7 C8 C9]	Where C1 to C9 are Numeric
Range	C1 > 0	Numeric from 0 to 9
Rules	R	$R = 11 - (9 \cdot C1 + 8 \cdot C2 + 7 \cdot C3 + 6 \cdot C4 + 5 \cdot C5 + 4 \cdot C6 + 3 \cdot C7 + 2 \cdot C8) \text{ modulo } 11$  If R= 10 or R= 11, Then R = 0  $C9 = R$
Sample	502757191	$= 11 - (9 \cdot 5 + 8 \cdot 0 + 7 \cdot 2 + 6 \cdot 7 + 5 \cdot 5 + 4 \cdot 7 + 3 \cdot 1 + 2 \cdot 9) \text{ modulo } 11$  $= 11 - (45 + 0 + 14 + 42 + 25 + 28 + 3 + 18) \text{ modulo } 11$  $= 11 - (175) \text{ modulo } 11$  $= 11 - 10$  $= 1$

## 2.24 RO – ROMANIA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Composed of maximum 10 digits.
Range:	C1...C10	Numeric.  The first digit cannot be '0'.
		Note that if the length is less than 10 digits, leading zeros must be assumed to perform the computation.
Rules:	C10	$A1 = C1*7 + C2*5 + C3*3 + C4*2 + C5*1 + C6*7 + C7*5 + C8*3 + C9*2$ $A2 = A1 * 10$ $R1 = A2 \text{ modulo } 11$ <p>If <math>R1 = 10</math>, then <math>R = 0</math> Else <math>R = R1</math></p> $C10 = R$
Sample:	11198699	<p>Length is less than 10, leading zeros must be assumed. Fiscal Registration Code<sup>3</sup> becomes: 001119869</p> $A1 = 0*7 + 0*5 + 1*3 + 1*2 + 1*1 + 9*7 + 8*5 + 6*3 + 9*2 = 145$ $A2 = 145 * 10 = 1450$ $R = 1450 \text{ modulo } 11 = 9$ $C10 = R$
Sample:	99908	<p>Length is less than 10, leading zeros must be assumed. Fiscal Registration Code<sup>3</sup> becomes: 000009990</p> $A1 = \{[(0*7)+(0*5)+(0*3)+(0*2)+(0*1)+(9*7)+(9*5)+(9*3)+(0*2)]*10\} = [(0+0+0+0+0+63+45+27+0)*10] = 135$ $A2 = 135 * 10 = 1350$ $R = (1350) \text{ MOD } 11 = 1350 \text{ MOD } 11 = 8$

<sup>3</sup> Where "Fiscal Registration Code" is the VAT number without the check digit.

**2.25 SE – SWEDEN**

VAT Format	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12]	Where C1 to C12 are digits
Range	C1..C12	Numeric from 0 to 9
Rules	[C11 C12]	$\geq 01$ and $\leq 94$
	C10	$= (10 - (R + C2 + C4 + C6 + C8) \text{ modulo } 10) \text{ modulo } 10$ <p>Where <math>R = S1 + S3 + S5 + S7 + S9</math></p> <p>Where <math>S_i = \text{INT}(C_i/5) + (C_i * 2) \text{ modulo } 10</math></p>
Sample	556188840401	$S1 = \text{INT}(5/5) + (5 * 2) \text{ modulo } 10 = 1 + 0 = 1$ $S3 = \text{INT}(6/5) + (6 * 2) \text{ modulo } 10 = 1 + 2 = 3$ $S5 = \text{INT}(8/5) + (8 * 2) \text{ modulo } 10 = 1 + 6 = 7$ $S7 = \text{INT}(8/5) + (8 * 2) \text{ modulo } 10 = 1 + 6 = 7$ $S9 = \text{INT}(0/5) + (0 * 2) \text{ modulo } 10 = 0 + 0 = 0$ $R = 1 + 3 + 7 + 7 + 0 = 18$ $C10 = (10 - (18 + 5 + 1 + 8 + 4) \text{ modulo } 10) \text{ modulo } 10 = 4$

## 2.26 SI – SLOVENIA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8]	Where C1 to C8 are digits.
Range:	C1...C8	Numeric
	C1...C7	$\geq 1000000$ and $\leq 9999999$
Rules:	C8	$A1 = C1*8 + C2*7 + C3*6 + C4*5 + C5*4 + C6*3 + C7*2$  $R = 11 - (A1 \text{ modulo } 11)$  If $R = 10$ , then $C8 = 0$ else if $R = 11$ then number is invalid else $C8 = R$
Sample:	15012557	$A1 = 1*8 + 5*7 + 0*6 + 1*5 + 2*4 + 5*3 + 5*2 = 81$  $R = 11 - (81 \text{ modulo } 11) = 7$  $C8 = 7$

## 2.27 SK – SLOVAKIA

VAT format:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	Where C1 to C10 are digits.
Range:	C1...C10	Numeric
	C1	In the range 1...9
	C2, C4...C10	In the range 0...9
	C3	One of 2, 3, 4, 7, 8, 9
Rules:	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10]	[C1 C2 C3 C4 C5 C6 C7 C8 C9 C10] modulo 11 = 0
Sample:	4030000007	C1...C10 numeric C3 = 3 4030000007 modulo 11 = 0
	5407062531	<u>Invalid</u> because: <ul style="list-style-type: none"> <li>• C3=0</li> <li>• 5407062531 modulo 11 <math>\neq</math> 0</li> </ul>