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## 1 Introduction

This document presents an analysis of the Ottoman Siyaq Numerals in order to determine possible models for encoding numerals of the Siyaq notation system in the Universal Character Set (ISO/IEC 10646). It draws upon information originally presented in L2/07-414 “Proposal to Encode Siyaq Numerals in ISO/IEC 10646” (December 2007), which suggested a unified encoding for the numerals of the four Siyaq traditions. Further research has indicated that although the numerals of the Diwani, Ottoman, Persian, and South Asian traditions are based upon a common pattern, there are sufficient differences in character typology, number of unique characters, and orthography to warrant the independent encoding for the numerals of each sub-system.

This document is intended to supplement two other documents recently submitted: L2/09-148 “Raqm Numerals: A Model for Encoding the Siyaq System of South Asia” and L2/09-140 “Diwani Numerals: Towards a Model for Encoding Numerals of the Siyaq Systems” (April 2009). In L2/09-140, the present author described the Diwani Numerals, which possesses the smallest character repertoire of the four sub-systems and the least technical requirements for shaping and other rendering behaviors. The presentation of the Raqm Numerals in L2/09-148 illustrated a more complex sub-system, which highlighted not only the differences in the character typology of the numerals of the Siyaq family, but also the locale-specific linguistic factors that differentiates the Siyaq sub-systems. The present analysis of the Ottoman Siyaq Numerals further highlights the differences between the sub-systems.

## 2 Background

The Ottoman, or Turkish, Siyaq system (Arabic *سياق* *siyāq* or *سياقة* *siyāqāt*). Similar to the other Siyaq traditions, Ottoman Numerals are a specialized subset of the Arabic script that was used for accounting and other numerical notation. The basic Ottoman Numerals are stylized monograms of the Arabic names for the numbers.

## 3 The Notation System

### 3.1 Structure

The Ottoman Siyaq Numerals represent units of a base-10 (decimal) positional system. The notation system is additive, that is, the value of a number is the sum of the values of the numerals that constitute it. There is no character for zero; it is inherently represented in the distinct numerals for the various decimal orders.

### 3.2 Directionality

The numerals are written right-to-left in the regular manner of the Arabic script.

	$x1$	$x10$	$x100$	$x1,000$	$x10,000$	$x100,000$
1	١	١٠	١٠٠	١٠٠٠	١٠٠٠٠	١٠٠٠٠٠
2	٢	٢٠	٢٠٠	٢٠٠٠	٢٠٠٠٠	٢٠٠٠٠٠
3	٣	٣٠	٣٠٠	٣٠٠٠	٣٠٠٠٠	٣٠٠٠٠٠
4	٤	٤٠	٤٠٠	٤٠٠٠	٤٠٠٠٠	٤٠٠٠٠٠
5	٥	٥٠	٥٠٠	٥٠٠٠	٥٠٠٠٠	٥٠٠٠٠٠
6	٦	٦٠	٦٠٠	٦٠٠٠	٦٠٠٠٠	٦٠٠٠٠٠
7	٧	٧٠	٧٠٠	٧٠٠٠	٧٠٠٠٠	٧٠٠٠٠٠
8	٨	٨٠	٨٠٠	٨٠٠٠	٨٠٠٠٠	٨٠٠٠٠٠
9	٩	٩٠	٩٠٠	٩٠٠٠	٩٠٠٠٠	٩٠٠٠٠٠

Table 1: Ottoman forms of the Siyaq numerals for six decimal orders.

### 3.3 Ordering

The ordering of Ottoman Siyaq Numerals reflects the method of expressing numbers in Arabic. A chief feature of Siyaq notation that represents this practice is the writing composite numbers of the primary and tens units with the primary numeral preceding the tens numeral.

### 3.4 Typology

Ottoman Siyaq Numerals are highly stylized monograms of the Arabic names for numbers for the primary units and their magnitudes in the orders of tens, hundreds, thousands and ten thousands.

The numerals may be decomposed to some degree into basic forms and into distinctive signs for the various decimal orders. The exceptions are generally the numerals for magnitudes of one (1, 10, 100, etc.) and two (2, 20, 200, etc.), which have unique forms in all decimal orders. A complete description of the numerals of each decimal order is given in section 4, however, a summary is given below:

- The primary numeral forms the basis for numerals of all decimal orders for that numeral.
- The numerals for the tens consist of the base form of the primary numeral joined to a distinctive terminal that represents the tens unit:  $\text{٥٠}$  FIFTY  $\leftarrow$   $\text{٦}$  TENS MARKS +  $\text{٥}$  FIVE.
- The numerals for the hundreds consist of the primary numeral joined to the mark  $\text{٤}$ :  $\text{٥٤}$  FIVE HUNDRED  $\leftarrow$   $\text{٤}$  HUNDREDS MARK +  $\text{٥}$  FIVE.

- The numerals for the thousands consist of the primary numeral joined to the mark **٠٠٠٠**: **٠٠٠٠** FIVE THOUSAND ← **٠٠٠٠** THOUSANDS MARK + **٥** FIVE.
- The numerals for the ten thousands consist of a modified form of the tens numerals written with the ten thousands mark **٠٠٠٠٠**: **٠٠٠٠٠** FIFTY THOUSAND ← **٠٠٠٠٠** + **٥** ← **٠٠٠٠٠** FIFTY.
- The numerals for the hundred thousands are written using the independent form of the primary numeral with the HUNDRED THOUSANDS MARK **٠٠٠٠٠٠**.
- The numerals for the millions are written using the thousands and the MILLIONS MARK **٠٠٠٠٠٠٠٠**.

## 4 The Numerals

### 4.1 The Primary Unit

The primary unit consists of numerals for the numbers 1 through 9. The numerals are stylized monograms of the Arabic names for the numbers or abbreviations of the names consisting of the initial and one or more letters.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH
١	ا	احد <i>aḥad</i>	one
٢	ا + ن	اثنان <i>iṭnān</i>	two
٣	ث + ل + ع	ثلاثة <i>talāta</i>	three
٤	ا + ر + ع	اربعة <i>arba'a</i>	four
٥	خ	خمسة <i>ḥamsa</i>	five
٦	س + ع	ستة <i>sitta</i>	six
٧	س + ع	سبعة <i>sab'a</i>	seven
٨	ث	ثمانية <i>tamāniya</i>	eight
٩	ت + ع	تسعة <i>tis'a</i>	nine

The primary numerals do not have secondary forms when they are written in composite numbers. The numeral SIX is a special case; it takes the form **٠** when written with TEN and TWENTY.

The numeral **٣** THREE has a variant shape **٣**.

The numeral **٨** EIGHT has a variant shape **٨**.

### 4.2 The Tens Unit

The numerals for the tens unit are composed from the base forms of the primary numerals joined to the tens terminal, which is a stylized form of the **ن** NOON in the Arabic suffix for the tens (**ون** *ūn*), which is represented as a hook: **٠**. The exceptions are TEN, TWENTY, and THIRTY.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH
عـ	—	عشرة	'ašara ten
ررـ	—	عشرون	'iṣrūn twenty
سـ	ع + ثلث	ثلاثون	talātūn thirty
ارـ	ع + ارب	اربعون	arba'ūn forty
حـ	ع + خم	خمسون	ḥamsūn fifty
سـ	ع + ست	ستون	sittūn sixty
ارـ	ع + سبع	سبعون	sab'ūn seventy
ثـ	ع + ثمان	ثمانون	ṭamānūn eighty
لـ	ع + تسع	تسعون	tis'ūn ninety

#### 4.2.1 Combining Forms of the Tens Numerals

The tens numerals have base forms that are used in the writing of numbers of the ten thousands unit. The base form of a tens numeral is derived by dropping the stylized NOON that marks the tens terminal **ع** and extending the left stroke out and curving it upwards.

	10	20	30	40	50	60	70	80	90
INDEPENDENT	عـ	ررـ	سـ	ارـ	حـ	سـ	ارـ	ثـ	لـ
COMBINING	ع	رر	س	ار	ح	س	ار	ث	ل

#### 4.3 The Hundreds Unit

Theoretically, the typology of the numerals for the hundreds indicates that they are derived from primary numerals joined to the mark **ل**. However, the glyph shapes for the hundreds exhibit differences from their primary counterparts.

The mark **ل** is also written as **ل** depending upon the primary numeral to which it is joined. Both marks are abbreviations of the Arabic word مائة 'hundred' as **ل**. The exceptions are the numerals ONE HUNDRED and TWO HUNDRED, which are monograms of the Arabic names for these numbers.

The numerals FOUR HUNDRED, SEVEN HUNDRED, and NINE HUNDRED are produced from a further modified form of their constituent primary numerals. FOUR HUNDRED **س** ← **ل**; SEVEN HUNDRED **ار** ← **ل**; NINE HUNDRED **ع** ← **ل**.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH
ما	—	مائة <i>mi'a</i>	one hundred
مار	—	مائتان <i>mi'ātān</i>	two hundred
معا	ع + ل	ثلاث مائة <i>talātu mi'a</i>	three hundred
معا	ع + ل	اربع مائة <i>arba'u mi'a</i>	four hundred
معا	ع + ل	خمس مائة <i>hamsu mi'a</i>	five hundred
معا	ع + ل	ست مائة <i>sittu mi'a</i>	six hundred
معا	ع + ل	سبع مائة <i>sab'u mi'a</i>	seven hundred
معا	ع + ل	ثمان مائة <i>tamānu mi'a</i>	eight hundred
معا	ع + ل	تسع مائة <i>tis'u mi'a</i>	nine hundred

#### 4.4 The Thousands Unit

The numerals for the thousands are composed from the primitive forms of the primary numerals joined to the terminal **الف**, which is an abbreviation of the Arabic word 'thousand'. The forms for ONE THOUSAND and TWO THOUSAND have special forms. The numeral ONE THOUSAND is a monogram **الف** of the Arabic word 'thousand'; the **الفان** TWO THOUSAND is based upon 'two thousand'.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH
الف	—	الف <i>alf</i>	one thousand
الفان	—	الفان <i>alfān</i>	two thousand
الفان	ع + الف	ثلاثة الاف <i>talāta ālāf</i>	three thousand
الفان	ع + الف	اربعة الاف <i>arba'a ālāf</i>	four thousand
الفان	ع + الف	خمسة الاف <i>hamsa ālāf</i>	five thousand
الفان	ع + الف	ستة الاف <i>sitta ālāf</i>	six thousand
الفان	ع + الف	سبعة الاف <i>sab'a ālāf</i>	seven thousand
الفان	ع + الف	ثمانية الاف <i>tamāniya ālāf</i>	eight thousand
الفان	ع + الف	تسعة الاف <i>tis'a ālāf</i>	nine thousand

	1	2	3	4	5	6	7	8	9
REG	١٠٠٠٠	٢٠٠٠٠	٣٠٠٠٠	٤٠٠٠٠	٥٠٠٠٠	٦٠٠٠٠	٧٠٠٠٠	٨٠٠٠٠	٩٠٠٠٠
VAR	—	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠	٠٠٠٠٠

#### 4.5 The Ten Thousands Unit

The ten thousands are written using modified forms of the tens numerals, in which the stylized NOON that marks the tens terminal ٦ is dropped, written with ٠٠٠٠٠, the ten thousands mark.

OTTOMAN	COMPOSITION	ARABIC SOURCE		ENGLISH
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	عشرة الاف	<i>'ašara ālāf</i>	ten thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	عشرون الفا	<i>'iṣrūn alfan</i>	twenty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	ثلاثون الفا	<i>talātūn alfan</i>	thirty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	اربعون الفا	<i>arba 'ūn alfan</i>	forty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	خمسون الفا	<i>ḥamsūn alfan</i>	fifty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	ستون الفا	<i>sittūn alfan</i>	sixty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	سبعون الفا	<i>sab 'ūn alfan</i>	seventy thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	ثمانون الفا	<i>ṭamānūn alfan</i>	eighty thousand
٠٠٠٠٠	٠٠٠٠٠ + ٠٠٠٠٠	تسعون الفا	<i>tis 'ūn alfan</i>	ninty thousand

#### 4.6 The Hundred Thousands Unit

The numerals for the hundred thousands unit are written using the numeral for the hundreds + ٠٠٠٠٠٠٠. HUNDRED THOUSANDS MARK. In Arabic, 'hundred thousand' is expressed as الف مائة *mi'a alf* and various magnitudes of the unit are expressed by prefixing the primary numeral to the unit, eg. 'five hundred thousand' *ḥamsu mi'a alf*.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH	
• مائة الف	• ما + • الف	مائة الف	<i>mi'at alfin</i>	one hundred thousand
• مائتا الف	• مائة + • الف	مائتا الف	<i>mi'atān alfin</i>	two hundred thousand
• مائة الف	• مائة + • الف	اربع مائة الف	<i>arba'u mi'at alfin</i>	three hundred thousand
• مائة الف	• مائة + • الف	ثلاث مائة الف	<i>ṭalāṭu mi'at alfin</i>	four hundred thousand
• مائة الف	• مائة + • الف	خمس مائة الف	<i>khamsu mi'at alfin</i>	five hundred thousand
• مائة الف	• مائة + • الف	ست مائة الف	<i>sittu mi'at alfin</i>	six hundred thousand
• مائة الف	• مائة + • الف	سبع مائة الف	<i>saba'u mi'at alfin</i>	seven hundred thousand
• مائة الف	• مائة + • الف	ثمان مائة الف	<i>ṭamānu mi'at alfin</i>	eight hundred thousand
• مائة الف	• مائة + • الف	تسع مائة الف	<i>tis'u mi'at alfin</i>	nine hundred thousand

#### 4.7 The Millions Unit

The numerals for the millions unit are written using the numerals for the thousands and the millions mark **• مائة الف**. In the Ottoman tradition a million is expressed as *alf maratan alf* 'thousand times a thousand', eg. five million *ḥamsu ālāf maratan alf* 'five-thousand times a thousand'.

OTTOMAN	COMPOSITION	ENGLISH
• مائة الف	• مائة + • الف	one million
• مائة الف	• مائة + • الف	two million
• مائة الف	• مائة + • الف	three million
• مائة الف	• مائة + • الف	four million
• مائة الف	• مائة + • الف	five million
• مائة الف	• مائة + • الف	six million
• مائة الف	• مائة + • الف	seven million
• مائة الف	• مائة + • الف	eight million
• مائة الف	• مائة + • الف	nine million

#### 4.8 Composite Numbers

Composite numbers of the primary and tens units are written with the primary numeral and tens numerals transposed. The numbers 10–19 are illustrated below.

OTTOMAN	COMPOSITION	ARABIC SOURCE	ENGLISH
•ع	—	عشرة	'ašara ten
•لع	•ع + ل	احد عشر	aḥad 'ašara eleven
•ماع	•ع + ما	اثنا عشر	iṭnā 'ašara twelve
•باع	•ع + ب	ثلاثة عشر	talāṭa 'ašara thirteen
•لوع	•ع + لا	اربعة عشر	arba'a 'ašara fourteen
•هوع	•ع + ه	خمسة عشر	ḥamsa 'ašara fifteen
•ع	•ع + سا	ستة عشر	sitta 'ašara sixteen
•ووع	•ع + و	سبعة عشر	sab'a 'ašara seventeen
•دوع	•ع + د	ثمانية عشر	ṭamāniya 'ašara eighteen
•لوع	•ع + لو	تسعة عشر	tis'a 'ašara nineteen

The numeral **سا** SIX takes the variant shape • when combined with ten and twenty in composite numbers: •ع, 16, •رر•, 26, •سسه•, 36, etc. This variant form resembles the PERIOD (see Section 4.9), but the two are distinguishable through context, as shown in the representation of the number 26.

## 4.9 Various Signs

### 4.9.1 Punctuation

A • PERIOD is generally written after a numeral when it appears independently. This period indicates the end of a number. When several numerals are written together, the period is written only after the final numeral.

### 4.9.2 Number Mark

Composite numbers are marked by an extending overline to indicate that the set of characters is a numerical group. This is the character **س**.

## 5 Implementation

### 5.1 Encoding Model

Given the above analysis, there are three possible model for encoding the Ottoman Siyaq Numerals.

1. Encode each numeral as an atomic character (66 characters)
2. Encode the numerals using character primitives (9 characters)
3. Encode a combination of numerals and unit marks

**1. Encode each numeral as an atomic character** The most elementary approach to encoding the Ottoman Siyaq Numerals is to encode each individual numeral as an atomic character. This model would require 65 characters for the numerals: primary units (9), tens (9), hundreds (9), thousands (9), ten thousands (9), hundred thousands (9), and millions (9); and number mark (1), and period (1).

The advantage of this model is that no special rendering rules are needed to write the numerals. Units larger than millions may be written using combinations of other characters.

The disadvantage is the encoding of redundant characters, in particular the hundred thousands, millions, and ten millions units, which may be written using characters for other units.

**2. Encode the numerals using character primitives** With this approach the Ottoman Siyaq Numerals would be represented using the primary numerals and the distinctive sign for each decimal order. This method would require a total of 9 characters: primary numerals (1) and a sign each for the tens, hundreds, thousands, ten thousands, hundred thousands, and millions units (6); and the number mark (1) and period (1).

The major disadvantage to this approach is the heavy reliance upon rendering rules. The shaping engine would need to produce the appropriate numeral from a combination of characters.

**3. Encode a combination of numerals and unit marks** A third approach is a mean between the two discussed previously. In this model the numerals of the primary, tens, hundreds, thousands, and ten thousands units are encoded as atomic characters. The numerals for the hundred thousands and millions are rewritten using sequences of other numerals and the distinctive signs for these decimal orders, eg. the numerals for the hundred thousands unit may be written using the primary unit + ONE HUNDRED THOUSANDS MARK.

This model would require 49 characters:

- The primary numerals (9)
- The tens (9)
- The hundreds (9)
- The thousands (9)
- The ten thousands (9)
- HUNDRED THOUSANDS MARK (1)
- MILLIONS MARK (1)
- PERIOD and NUMBER MARK (2)

Of the three, this approach offers the least complicated model for encoding the Ottoman Siyaq Numerals.

## 5.2 A Basic Character Set for Ottoman Siyaq Numerals

Based upon encoding model #3, 49 characters are required to encode Ottoman Siyaq Numerals in the UCS:

```

xx01 OTTOMAN SIYAQ NUMERAL ONE
xx02 OTTOMAN SIYAQ NUMERAL TWO
xx03 OTTOMAN SIYAQ NUMERAL THREE
xx04 OTTOMAN SIYAQ NUMERAL FOUR
xx05 OTTOMAN SIYAQ NUMERAL FIVE
xx06 OTTOMAN SIYAQ NUMERAL SIX
xx07 OTTOMAN SIYAQ NUMERAL SEVEN
xx08 OTTOMAN SIYAQ NUMERAL EIGHT
xx09 OTTOMAN SIYAQ NUMERAL NINE

xx0A OTTOMAN SIYAQ NUMERAL TEN

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xx0B OTTOMAN SIYAQ NUMERAL TWENTY
xx0C OTTOMAN SIYAQ NUMERAL THIRTY
xx0D OTTOMAN SIYAQ NUMERAL FORTY
xx0E OTTOMAN SIYAQ NUMERAL FIFTY
xx0F OTTOMAN SIYAQ NUMERAL SIXTY
xx10 OTTOMAN SIYAQ NUMERAL SEVENTY
xx11 OTTOMAN SIYAQ NUMERAL EIGHTY
xx12 OTTOMAN SIYAQ NUMERAL NINETY

xx13 OTTOMAN SIYAQ NUMERAL ONE HUNDRED
xx14 OTTOMAN SIYAQ NUMERAL TWO HUNDRED
xx15 OTTOMAN SIYAQ NUMERAL THREE HUNDRED
xx16 OTTOMAN SIYAQ NUMERAL FOUR HUNDRED
xx17 OTTOMAN SIYAQ NUMERAL FIVE HUNDRED
XX18 OTTOMAN SIYAQ NUMERAL SIX HUNDRED
XX19 OTTOMAN SIYAQ NUMERAL SEVEN HUNDRED
xx1A OTTOMAN SIYAQ NUMERAL EIGHT HUNDRED
xx1B OTTOMAN SIYAQ NUMERAL NINE HUNDRED

xx1C OTTOMAN SIYAQ NUMERAL ONE THOUSAND
xx1D OTTOMAN SIYAQ NUMERAL TWO THOUSAND
xx1E OTTOMAN SIYAQ NUMERAL THREE THOUSAND
xx1F OTTOMAN SIYAQ NUMERAL FOUR THOUSAND
xx20 OTTOMAN SIYAQ NUMERAL FIVE THOUSAND
xx21 OTTOMAN SIYAQ NUMERAL SIX THOUSAND
xx22 OTTOMAN SIYAQ NUMERAL SEVEN THOUSAND
xx23 OTTOMAN SIYAQ NUMERAL EIGHT THOUSAND
xx24 OTTOMAN SIYAQ NUMERAL NINE THOUSAND

xx25 OTTOMAN SIYAQ NUMERAL TEN THOUSAND
xx26 OTTOMAN SIYAQ NUMERAL TWENTY THOUSAND
xx27 OTTOMAN SIYAQ NUMERAL THIRTY THOUSAND
xx28 OTTOMAN SIYAQ NUMERAL FORTY THOUSAND
xx29 OTTOMAN SIYAQ NUMERAL FIFTY THOUSAND
xx2A OTTOMAN SIYAQ NUMERAL SIXTY THOUSAND
xx2B OTTOMAN SIYAQ NUMERAL SEVENTY THOUSAND
xx2C OTTOMAN SIYAQ NUMERAL EIGHTY THOUSAND
xx2D OTTOMAN SIYAQ NUMERAL NINETY THOUSAND

xx2E OTTOMAN SIYAQ HUNDRED THOUSANDS MARK
xx2F OTTOMAN SIYAQ MILLIONS MARK
xx30 OTTOMAN SIYAQ PERIOD
xx31 OTTOMAN SIYAQ NUMBER MARK

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## 6 References

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CHIFFRES <i>siq.</i>	VALEURS.	NOMS DE NOMBRE EN TURC.	CHIFFRES <i>siq.</i>	VALEURS.	NOMS DE NOMBRE EN TURC.
ب	1	<i>bir.</i>	او ب	14	<i>on deurt.</i>
با	2	<i>iki.</i>	او ب	15	<i>on bech.</i>
با ب	3	<i>utch.</i>	او ب	16	<i>on alty.</i>
با ب	4	<i>deurt.</i>	او ب	17	<i>on iedi.</i>
با ب	5	<i>bech.</i>	او ب	18	<i>on sekiz.</i>
با et . <sup>1</sup>	6	<i>alty.</i>	او ب	19	<i>on d'ogouz.</i>
با ب	7	<i>iedi.</i>	او ب	20	<i>iguirmi.</i>
با ب ou با ب	8	<i>sekiz.</i>	او ب	21	<i>iguirmi bir.</i>
با ب	9	<i>d'ogouz.</i>	او ب	22	<i>iguirmi iki.</i>
او ب	10	<i>on.</i>	او ب	23	<i>iguirmi utch.</i>
او ب	11	<i>on bir.</i>	او ب	24	<i>iguirmi deurt.</i>
او ب	12	<i>on iki.</i>	او ب	25	<i>iguirmi bech.</i>
او ب	13	<i>on utch.</i>	او ب	26	<i>iguirmi alty.</i>

<sup>1</sup> Le *o* remplace ordinairement le signe با dans les nombres composés; mais, placé à la fin du nombre, ce n'est qu'un signe orthographique sans valeur dans la combinaison.

<sup>2</sup> Dans les nombres composés de dizaines et d'unités, celles-ci s'écrivent toujours en premier lieu, comme en arabe; mais, en turc, les dizaines s'expriment d'abord, et les unités ensuite, sans conjonction.

Figure 1: Table showing the Ottoman number forms (from Pihan 1860: 235).

CHIFFRES siyaq.	VALEURS.	NOMS DE NOMBRE EN TURC.	CHIFFRES siyaq.	VALEURS.	NOMS DE NOMBRE EN TURC.
• او سر •	27	iguirmi iedi.	• مار •	200	iki iuz.
• د سر •	28	iguirmi sekiz.	• نجا •	300	utch iuz.
• لو سر •	29	iguirmi d'ogouz.	• سچ •	400	deurt iuz.
• و •	30	otouz.	• ح •	500	bech iuz.
• ل و •	31	otouz bir, etc.	• سجا •	600	alty iuz.
• او •	40	gyrg.	• چ •	700	iedi iuz.
• ح •	50	elli.	• ن •	800	sekiz iuz.
• و •	60	altmich.	• چ •	900	d'ogouz iuz.
• ل و •	66	altmich alty.	• ل و •	1,000	bîn.
• او •	70	iëtmich.	• ع •	10,000	on bîn.
• و •	80	sekadn, seksen.	• ر •	20,000	iguirmi bîn.
• لو •	90	d'ogadn.	• مار و •	100,000	iuk.
• ما •	100	iuz.			

Figure 2: Table showing the Ottoman number forms (from Pihan 1860: 236).

<p>• مار و سچ •</p> <p>۱۶۸۸۷۵</p> <p>168,875</p>	<p>• نجا او او سچ •</p> <p>۳۴۷۵۹۳</p> <p>347,593</p>
<p>• سچ و سچ •</p> <p>۴۶۵۸۹۰</p> <p>465,890</p>	<p>• ح • ر • نجا • او •</p> <p>۵۳۶۳۴۶</p> <p>526,346</p>

Figure 3: Table showing composite numbers written with Ottoman Numerals (from Pihan 1860: 237).

دریاه صاب لوز سیاق و رسم	
۱	۱
۲	۲
۳	۳
۴	۴
۵	۵
۶	۶
۷	۷
۸	۸
۹	۹
۱۰	۱۰
۱۱	۱۱
۱۲	۱۲
۱۳	۱۳
۱۴	۱۴
۱۵	۱۵
۱۶	۱۶
۱۷	۱۷
۱۸	۱۸
۱۹	۱۹
۲۰	۲۰
۲۱	۲۱
۲۲	۲۲
۲۳	۲۳
۲۴	۲۴
۲۵	۲۵
۲۶	۲۶
۲۷	۲۷
۲۸	۲۸
۲۹	۲۹
۳۰	۳۰
۳۱	۳۱
۳۲	۳۲
۳۳	۳۳
۳۴	۳۴
۳۵	۳۵
۳۶	۳۶
۳۷	۳۷
۳۸	۳۸
۳۹	۳۹
۴۰	۴۰

Kitapçı Bay Rafî'nin hediye ettiği mecmuanın ilk sahîfesi. Bu eserde siyakat rakkamlarının gösterir 15 sahîfe vardır.

1 - 42 ye kadar siyakat rakkamları. Siyakat rakkamları siyah mürekekle ve arapça harflerinden telkîs olunarak vücade getirilmiştir. Rakkamlar karışmaz mürekeklep ile yazılmıştır.

۴۱	۴۱
۴۲	۴۲
۴۳	۴۳
۴۴	۴۴
۴۵	۴۵
۴۶	۴۶
۴۷	۴۷
۴۸	۴۸
۴۹	۴۹
۵۰	۵۰
۵۱	۵۱
۵۲	۵۲
۵۳	۵۳
۵۴	۵۴
۵۵	۵۵
۵۶	۵۶
۵۷	۵۷
۵۸	۵۸
۵۹	۵۹
۶۰	۶۰
۶۱	۶۱
۶۲	۶۲
۶۳	۶۳
۶۴	۶۴
۶۵	۶۵
۶۶	۶۶
۶۷	۶۷
۶۸	۶۸
۶۹	۶۹
۷۰	۷۰

43 - 82 ye kadar siyakat rakkamları

۷۱	۷۱
۷۲	۷۲
۷۳	۷۳
۷۴	۷۴
۷۵	۷۵
۷۶	۷۶
۷۷	۷۷
۷۸	۷۸
۷۹	۷۹
۸۰	۸۰
۸۱	۸۱
۸۲	۸۲
۸۳	۸۳
۸۴	۸۴
۸۵	۸۵
۸۶	۸۶
۸۷	۸۷
۸۸	۸۸
۸۹	۸۹
۹۰	۹۰

100 - 7,000,000 e kadar siyakat rakkamları

۹۱	۹۱
۹۲	۹۲
۹۳	۹۳
۹۴	۹۴
۹۵	۹۵
۹۶	۹۶
۹۷	۹۷
۹۸	۹۸
۹۹	۹۹
۱۰۰	۱۰۰
۱۰۱	۱۰۱
۱۰۲	۱۰۲
۱۰۳	۱۰۳
۱۰۴	۱۰۴
۱۰۵	۱۰۵
۱۰۶	۱۰۶
۱۰۷	۱۰۷
۱۰۸	۱۰۸
۱۰۹	۱۰۹
۱۱۰	۱۱۰

200 - 990 a kadar siyakat rakkamları

۱۱۱	۱۱۱
۱۱۲	۱۱۲
۱۱۳	۱۱۳
۱۱۴	۱۱۴
۱۱۵	۱۱۵
۱۱۶	۱۱۶
۱۱۷	۱۱۷
۱۱۸	۱۱۸
۱۱۹	۱۱۹
۱۲۰	۱۲۰
۱۲۱	۱۲۱
۱۲۲	۱۲۲
۱۲۳	۱۲۳
۱۲۴	۱۲۴
۱۲۵	۱۲۵
۱۲۶	۱۲۶
۱۲۷	۱۲۷
۱۲۸	۱۲۸
۱۲۹	۱۲۹
۱۳۰	۱۳۰

۱۳۱	۱۳۱
۱۳۲	۱۳۲
۱۳۳	۱۳۳
۱۳۴	۱۳۴
۱۳۵	۱۳۵
۱۳۶	۱۳۶
۱۳۷	۱۳۷
۱۳۸	۱۳۸
۱۳۹	۱۳۹
۱۴۰	۱۴۰
۱۴۱	۱۴۱
۱۴۲	۱۴۲
۱۴۳	۱۴۳
۱۴۴	۱۴۴
۱۴۵	۱۴۵
۱۴۶	۱۴۶
۱۴۷	۱۴۷
۱۴۸	۱۴۸
۱۴۹	۱۴۹
۱۵۰	۱۵۰

Müteferrik siyakat rakkamlarına ait nümüneler. Aynı eser

Müteferrik siyakat rakkamlarına ait nümüneler. Aynı eser

Figure 4: Table showing Siyaq forms as used in Turkey (from Cevdet 1937: 17-18).

