

E U R O P E A N C O M M I S S I O N

RECOMMENDATION FOR THE PLACEMENT OF THE EURO SIGN ON COMPUTER KEYBOARDS

AND

SIMILAR INFORMATION PROCESSING EQUIPMENT

Status: Recommendation

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v. 1.4

UPDATE TO THE PRESENT VERSION 1.4

The current version of this document was finalised on the 4th of November 1997. Due to the agreements and the decisions made by the Commission since the appearance of the initial version of the document (draft proposal) some statements contained previously in the initial version are no longer valid. However, for reasons of clarity and continuity, these statements were preserved in the current version. Where appropriate, newly added footnotes signal the changes that were made.

The status of the present version of the document is: *EC official recommendation*.

FOREWORD

This document contains a proposal for the placement of the euro sign on computer keyboards.

A broad consultation involving various parties both inside and outside the Commission is underway with the intention to arrive at a common agreement based on the present proposal¹. Hence, some ideas and recommendations expressed in the document may be subject to review and amendment².

Practical information

This document was created using Eurolook and Word 97 which in Windows NT platforms supports the euro. However given that the current exchange format is still Word 6 the document was converted. Currently, Word 6 format does not support the euro. Whenever this character (€) is used in the original document it will be replaced either by the string “€” or by nothing (i.e. by a square, if Eurolook is not used). Readers shall receive upon request a printed copy of the original.

¹ By November 4, 1994 such an agreement was achieved within the Commission's high-level co-ordination group (Interservice group for the euro). The present footnote was added on November 4.

² By November 4, 1997, given that the current proposal was approved, this statement is no longer valid.

EXECUTIVE SUMMARY

The European Commission through public opinion polls has introduced a new character (€)³ which represents the new European currency: the *euro*. The European Monetary Institute has announced its support for the new character.

The introduction of such a character implies its incorporation into international IT standards. An internal EC working group has been busy since July 1997 preparing proposals for the various internationalisation bodies as well as the IT industry.

Among the main tasks in this area is the definition of the **placement** of the *euro* on computer **keyboards**. It is essential that this be accompanied by the addition of the euro to 8-bit character sets.

A communication of the Commission⁴ encourages the broad use of the euro by IT developers, advises its integration in IT systems, states its intention to officially register the new character and invites the IT manufacturers to reserve a “prominent” position on keyboards. The task of drafting a proposal for the position of euro symbol on the keyboards has been assigned to the Commission’s Informatics Directorate.

The Informatics Directorate, launched an internal consultation procedure to identify possible solutions. This analysis took into account: the existing standards, the *de facto* situation in this area, the content of various specialised Internet newsgroups, the constraints of the IT industry and the needs of the Commission.

The rationale of the proposal contained in this paper can be resumed as follows: Level 1 (unshifted) and Level 2 (shifted) placements are considered *prominent*. It was established that it is complex, time consuming and therefore impractical to find a solution using either of these levels.

On the other hand, current keyboard technology renders Level 3 equivalent ergonomically to Level 2. Using Level 3, a visible placement of the euro on today’s keyboards, easily accessible and simple to remember would be possible.

The **short term** proposal that satisfies most of the above aspects is to place the euro on the “**E**” key. It is produced by pressing two keys: **AltGr** and “**E**” with the symbol be engraved on the **keytop**. This is a well known practice in keyboard design. Many existing keyboards use this type of engraving (e.g. German, Portuguese, Swiss, Greek). This practice has been used extensively in the past on various types of keyboards.

³ If printed with Word 6 the euro sign present between the parentheses wont appear. In such a case the euro sign is automatically replaced by the string “€” in all Eurolook documents.

⁴ COM(97) 418 – July 97

This solution has multiple advantages: is **common** to **all** major types of keyboards, it is simple to implement, applicable immediately and ergonomically sound. Above all the association of E with the euro makes it easy to remember.

It has one disadvantage. Out of the 15 keyboards used in the member states, **one** type uses the sequence “AltGr+E” to produce an alphabetic character, the letter “**é**”. This type of keyboard is used in the **United Kingdom** and in **Ireland**. While use of “**é**” is relatively rare in English text, it is used quite often in written Irish (Gaelic –Gaeilge).

Solutions to circumvent the problem are proposed in the present document (section 5.3). Prior to their adoption (and their subsequent communication to the industry), they must be approved at political level.

An additional **long-term** proposal (from the year 2000 on) is made to the industry. It suggests to introduce, a **new** key, which will be placed, preferably, in the **same location** on all major keyboard layouts. A specific location is suggested. This would allow the euro to be placed on Level 1.

The **short** term solution could be made rapidly available to all existing computer types provided that the euro is also added to 8-bit legacy character sets⁵.

Currently, 80% of the world computer installed base uses such character sets. The remaining 20% uses state-of-the-art technology (Unicode) allowing an immediate integration of the euro. The Commission is now moving to this technology. The move has started and will be completed by the end of 1998.

The above mentioned 80 – 20 ratio is likely to be reversed by 1999.

Concerning the present recommendation, as soon as a common agreement is reached at a technical level by the relevant services of the Commission and approved by the Interservice Group the proposal should be submitted to a higher political level.

Thereafter, provided a consensus is reached, the Commission should launch a broad campaign of information aimed at both the IT industry and the standardisation community. Both solutions should be advocated.

Finally, it is strongly believed that the whole issue of the introduction of the euro to the keyboards is of great symbolic importance and will give a high profile to the euro and thus indirectly to the EU. It is important therefore that political backing be sought at the appropriate level.

⁵ These are alphabets used by computers to recognize and process characters or signs. The most important are available on the keyboards.

1. PROBLEM STATEMENT

As a result of European Monetary Union and the policies associated with it, a new character representing the European Currency (the euro) has been designed and officially proposed by the Commission to the public.

As this character will be used in a variety of ways by today's IT systems, a series of standardisation issues enter into play. Outstanding among these issues is **the introduction of the euro on computer keyboards**. This question is closely related to the addition of the euro on existing character sets i.e. alphabets that are used by computers.

The present paper examines possible solutions for the placement of the euro on different types of keyboards. The proposal assumes that the euro will be introduced in the most important standard character sets (ISO 8859/xx, Windows CP, EBCDIC, ASCII)

2. METHODOLOGY

2.1 Technical aspects

- All principles pertaining to keyboard design, definition and functioning as expressed in existing international (ISO/IEC, ECMA) or national standards (Elot 1000) were studied. A large number of existing keyboards were also studied in search of an optimal placement.
- The difficulties of **replacing** existing graphic symbols or modifying their placement were identified and taken into account.
- The position of similar symbols i.e. the US dollar (\$) the British pound (£), the Japanese yen (¥) the Korean Wong (₩) on a large number of industry keyboards were examined.
- Priority was given to the study of keyboards where the **underlying** alphabet is the **Latin** alphabet. This approach is partly justified by the fact that even non Latin alphabet based keyboards have provisions for a Latin level in their design and definition. However, a solution for the placement of the euro has been sought both to Latin and Greek based keyboards.
- Central and to some extent Eastern European keyboard layouts have also been studied.
- The **cost** to the Industry of include the euro on existing keyboards was taken into account.
- A **broad** consultation within the Commission services was undertaken to ensure that various potential solutions are widely acceptable.
- The evolution of the major types of keyboard over the last 35 years from typing machines to today's computer keyboards was considered. All types of computer keyboard technologies were studied (e.g. 'Wintel', IBM, Apple/Macintosh, mainframe etc).
- Character set issues were thoroughly studied.
- The present analysis is based on set of principles (section 3 below).

2.2 Procedural considerations

- As the Euro is going to be a **common** currency for many countries it is important to establish whether the principle of subsidiarity is applicable to the decision-making process for these issues. It is indeed considered that the most appropriate body to carry out such issues is the Commission.
- A final decision for the placement of the Euro on the keyboards should be made before the end of this year⁶.
- Advice concerning some political aspects of the problem, involving policy making and strategic positioning, was sought and obtained from DG 2.
- Co-ordination with and acceptance by CCS, DG 3, DG 10, DG 13 and DG 15 was needed to finalise the current proposal (see below).
- As a result of a common position, a final proposal should be presented for approval to the Interservice Group. (IG)⁷
- Approval by the IG would lead to a series of communications to the Industry and to standardisation bodies world-wide.
- The main action vis-à-vis the standardisation organisations shall be the **urgent demand** to launch the process of adding the euro in 8-bit character sets.
- The Commission's procurement policies shall integrate the decision as a mandatory element.

⁶ This statement was fulfilled by the 4th of November 1997.

⁷ Final approval by the IG was obtained on November 3, 1997. The present footnote was added in this document on November 4, 1997.

3. GUIDING PRINCIPLES

- (1) The euro should have a **prominent** placement on keyboards. We consider, **visibility** on the keyboard layout and **ease** of activation (**user friendliness**) to be the most essential properties of a prominent position. The ultimate aim is that the euro be introduced on as many as possible national keyboards around the World.
- (2) Introduction of the euro in Keyboards involves **character set** issues and implies the availability of new computer **fonts** (display and printer fonts).
- (3) Keyboard technology and standards distinguish 3 main functional levels: **Level 1** (press “M” key to produce “m”), **Level 2** (Press Shift and “M” key to produce “M” and **Level 3** (press AltGr key and Key “A” on a UK keyboard to obtain character “à”).
- (4) It is a common practice in keyboard design to place **Level 3** on the **top face** of keys. (e.g. the German keyboards).
- (5) There is nothing explicit or implicit in the existing standards leading to the conclusion that **Level 1** or **Level 2** characters have a **prominent** placement on the keyboard.
- (6) Given the technical capabilities available today in the keyboard technology areas, **levels 2 and 3 are considered equivalent** in terms of **ergonomics and of visibility**. In other words a graphic character produced by SHIFT+<the character> has the same ergonomics and visibility as the one produced by AltGr+<the character>.
- (7) It is neither feasible (mainly on economical level) nor reasonable to ask the industry to introduce today a **new** physical key to be added on existing (101 or 102) keyboard layouts. This is considered as a **pragmatic** approach.
- (8) The euro graphic symbol may replace **neither** the dollar (\$) **nor** the pound.(£).
- (9) The euro **should not** be placed on the Numeric pad section (ZN) neither on the Function and Editing sections (ZF/ZE). This would be neither ergonomic nor **prominent**.
- (10) The proposed solution should be capable of easy implementation on a large number of keyboards.
- (11) The principle “There is still enough room on existing keyboards to accommodate the euro” is true of everything we say here.
- (12) Implementation costs should be minimal for both hardware and software vendors.

4. FACTS AND FIGURES

Our analysis of the question and the study of possible alternative solutions result in the following observations:

4.1 Facts

- The major issue regarding the placement of the euro remains its introduction into the existing **character sets** used in the IT field. Most of the current computers in the world use character set technology where the addition of a **new** character, although technically feasible, poses **serious** problems.
- The market offers also mainstream computer systems supporting Unicode (ISO 10646), a character set capable of supporting the euro immediately. Inclusion of the euro in this standard is underway. This aspect can be considered closed.
- Attempting to place the euro on **level 1** involves the considerably complex task of modifying existing layouts by removing or modifying the placement of given characters to a great extent (e.g. μ , - _ °, ^{2,3}). An example given in the technical annex illustrates this difficulty.
- The complexity mentioned above is amplified by the fact that there is no decision regarding the modification of the **legacy character sets**. This aspect would be of particular interest mainly because current proposals in this field suggest removing some characters considered *not useful* or *rarely used*.
- As a result and in line with a large majority of opinions Level 1 is ruled out as potential candidate for the placement of euro on **existing keyboards**.
- It should also be stressed that any change in the **Computer Keyboard layouts** is historically based on mainly commercial considerations. As a matter of fact, study of transformation of the keyboard over the last 35 years shows undeniably that there is **no underlying principle** or well founded criteria for the placement of a given character apart from not infiltrating the alphanumeric key area.
- The presence of currency signs on keyboards was recorded as early as the time of **typing machines**. Consequently it is considered as a well established user need.
- The newest (1995-6) type of keyboard on the market has **104/5** keys and is manufactured mainly for PC. Numerous manufacturers have produced it. Most new PC have it.
- All keyboards manufactured in the last 3 years have an **AltGr** key. Every new keyboard that is produced has this key.

4.2 Figures

- Speaking of the world computer park, the situation today could be roughly described as follows: the **majority (80%)** of computers have no possibility to integrate the euro **sign** if the above mentioned modifications pertaining to character sets are not materialised. The remaining **20%** is capable of supporting the euro immediately.
- The **software** and **hardware** modifications needed to render computers capable of supporting the euro have a **cost**. Depending on the scope and the nature of this modification costs may vary but in all cases they are considered **limited**.
- Many countries have their currency on **Level 2** on their national keyboards (e.g. US, UK)
- The dollar “\$” is present on **Level 1** position on **only 6%** of the examined keyboards (these are: the French, Swiss and Belgian keyboards).
- The dollar is placed on **Level 2** (Shift + a key) on more than **50%** of the studied keyboards (**29** out of 50 keyboards). On more than **25%** of the cases, the dollar is placed on **Level 3**.
- **All** existing forms and varieties of **US keyboards** place the \$ on **Level 2** (Shifted).
- The same applies for various *QWERTY*'s such as Ireland, UK, English Canadian.
- Most of the **US** keyboards do not contain the British Pound (£). More than **50%** of the keyboards examined do not contain the pound (£). On no keyboard is the pound (£) placed on **Level 1**.
- The pound is placed on **level 3** (AltGR and ALTGr+Shift) on **24%** all keyboards. Only on **18%** it is placed on **Level 2**. All **British** keyboards have the pound on **Level 2 (Shift+3)**.
- Most keyboards (based on Latin, Greek, Cyrillic, Hebrew, Arabic alphabets) do not support the Yen (¥). Every Japanese keyboard has a Latin level. The Yen is placed on Level 1 on this Latin level. The same applies to the Wong (₩) and the Korean keyboards.
- It is not an **uncommon** practice to use **Level 3** for currency symbols (e.g. **all** Nordic keyboards, Czech, Canadian multilingual, US international etc.)

5. PROPOSAL

In the light of the preceding discussion and the aforementioned principles the following proposal is considered to conform to the concept of “prominence”; It is to be simple, ergonomically sound, easily implemented and hence practical.

The proposal assumes that the question of the euro and the **legacy character sets** is solved. Under this assumption, the solution is applicable to both legacy and state of the art computer technologies.

The proposal distinguishes a **short** term and a **long** term recommendation.

5.1 Short term proposal applicable immediately (next 2 years from now)

*On all Latin (and Greek) alphabet based keyboards, place the euro on the key **D 03 on Level 3**⁸. In layman's terms, put the euro on the ‘E’ key.*

*The euro shall be produced by simultaneous depression of **two** (2) keys: key AltGr and key E, in the common notation: AltGr+E.*

*The euro shall be visible on the **keytop** of the “E” key (labelling is made on the lower third of Group 2 column²). **This is the recommended position.***

Lest manufacturers choose to place the euro on the front keyface (vertical plane) of the “E” key, the euro shall be the only character present on the **keyface**⁹.

5.2 Long Term proposal

*Invite the Industry to introduce a **new** key on future keyboards. On this key the euro will be on Level 1. It is strongly recommended that the new key be placed on a common position on all major types of keyboards. The EC suggested position is on row B (see footnote 2), under the Carriage Return key, **left** or **right** from the SHIFT key located right under the Carriage Return.*

The name of the euro character in view of its registration in keyboard layout international standards will be the same as for its registration in the ISO 10646, Unicode and in other character set standards: “**euro Sign**”.

In existing keyboards (very old and in small number) where there is no AltGr key, the euro could be produced even then by using the sequence Ctrl+Alt+E.

⁸ according to ISO 9995 and 8884 definitions

⁹ labelling is made on the lower third of the Group 1 column– see ISO 9995.

5.3 Proposal for modification of keyboards where the position AltGr+E is reserved

There is a very small number of existing keyboards on which the key combination AltGr+E is already defined. The keyboards in question are: the British, the Irish, the US International, the Latvian, the Brazilian.

On the above mentioned keyboards, the combination **AltGr+E** produces today the accented Latin character “é”. For this case various solutions may be available:

- (a) Produce the euro by pressing a different key sequence than the proposed mainstream solution e.g. CTRL+E or CTRL-SHIFT+E. If such an approach is acceptable then legacy software using already the adopted sequence should have to be modified.
- (b) Produce both the “é” and the “É” by a common combining mechanism easily available on all these keyboards and used previously by many generations of typists: Press the accent first “´” then “E” or “Shift E” to obtain respectively “é” and “É”.
- (c) Exceptionally, place the euro on Level 3 (AltGr) on either the key [3] or the key [4]. The reason being that both keys bear already currency signs. Key [3] contains the pound and key [4] contains the \$ (both on Level 2). The mnemonic association is obvious.

In the above two cases (a and c) the euro will be **engraved** on the “E” **keytop**. If the character “é” is already engraved it could be placed on the front keyface. The inverse possibility could also be envisaged.

It should be noted that the frequency of the characters “é” (occasional) and “É” (very rare or never) in English text is normally low. The inconvenience of changing the mechanism of producing these characters is probably insignificant in UK.

This is not the case for countries like Ireland, where frequent use is made of these characters in written Gaelic (Gaeilge). In such cases, approach (a) or (c) would seem more appropriate.

6. RATIONALE OF THE PROPOSAL

A series of arguments are in favour of the above proposals:

PROMINENCE EQUALS UNIVERSALITY

It is rather the visibility of the placement that confers the character of prominence than the mechanism of producing it. The visibility of the proposed placement is unanimously considered optimal.

On most existing keyboards (if not on all) the euro shall have a **unique placement**. To a large extent, the euro will be the **only currency sign** on numerous keyboards to be produced by a **common** sequence of keys (AltGr+E).

ERGONOMICS

In reality, the proposed placement corresponds equally to a **Level 2** functional assignment for the simple fact that with today's technology only **two (2) keys** are necessary to produce the euro, exactly as if it were placed on functional **level 2** (i.e. Shift+character).

All Latin and Greek based keyboards have the "E" key on precisely the same location. In Latin and Greek alphabets the « E » comes in exactly the same order (5th letter of the alphabet).

Visually and psychologically the most close character to the euro sign is the letter "E". The "E" character is present also on non Latin alphabets (eg. Cyrillic, Russian).

The AltGr+E position is not reserved in the Latin level of the Japanese (and other) national keyboard and thus it could be added to it.

PRAGMATISM - SIMPLICITY

The use of the AltGr+E position is by far the **simplest** of all possible solutions. It also covers a **maximum** number of cases where its introduction does not create any inconvenience. For the very limited number of keyboards where this position is already taken there exist straightforward, acceptable solutions (see above section 5.3 points (a) to (c)).

The **E** key belongs to a very stable area on existing keyboard layouts. If the industry is reluctant to the introduction of a new key dedicated to the euro the AltGr+E solution will last longer. In such a case it is highly unlikely that future keyboard design will affect the stability and permanence of the E key.

Major software vendors could easily adapt their applications so as to integrate such a solution (example: Microsoft).

APPLICABILITY - COST

The solution could be made readily available. The solution is by far the most economical for the industry (a minor and uniform software modification).

7. SUMMARY OF ADVANTAGES AND DISADVANTAGES OF THE “ALTGR+E” SOLUTION

ADVANTAGES

- Prominence is ensured both by the visibility and the uniformity of the placement.
- Ergonomically optimal (mnemonic association, ease of activation)
- Simple solution, easily implementable on **existing** 101, 102 or 104/5 keyboards
- Cost effective – The Industry will implement the same change for different types of keyboards.
- The solution is common to all Latin based (and Greek) keyboards.
- On keyboards where the character will not be engraved (at least for some period of time) the mnemonics of the E/Euro/€ association are evident i.e. easy to remember (E for euro).

DISADVANTAGES

- The British, Irish and US International keyboards use the sequence AltGr+E to generate the accented character “é”. However the character can be generated by other standard means such as a combining technique.
- Some existing software might use this sequence as short-cuts i.e. to accelerate repetitive operations. Such a sequence could be easily modified. It is frequent for consecutive versions of software to change such sequences anyway.
- Furthermore, the last statement is likely to be true for many other possible solution anyway.

8. VARIOUS POINTS - FURTHER PROPOSALS

The proposed position, if agreed upon and ratified, it should be broadly communicated to the Industry. The combination AltGr+E (and its equivalent Ctrl+Alt+E) should be reserved solely to the euro and software developers should refrain from using it in application code (e.g. shortcuts, accelerator Keys etc.).

Guidelines to whether the already communicated logogram/logotype of the euro is sufficient and appropriate as a pattern to produce images of the sign to be engraved on the physical keys is still to be studied (out of the scope of the present document).

The same applies for the precise **denomination** of the euro character for keyboard standardisation purposes (standardisation issue).

It should be noted that the current proposal targets all major technological types of keyboards today available on the market (e.g. DEC, HP, IBM, Macintosh, Microsoft, Sun, European manufacturers etc).

The present proposal does not cover the area of printers. Further investigation is needed to address the issues related to the introduction of the euro in existing and future printer systems. The main issue is the inclusion of the euro sign in the ROM fonts for the printers. Without this inclusion, printing must use the download TrueType option. As a side effect, printing will slow down.

Current support of the euro within the Institution is provided via the New Technological Platform (NTP). All EC Windows NT[®] v.4.0 environments support the euro today. Arrangements have been done to enable version 4.0 to support the euro. These arrangements are in tune with the present proposal. However, in case a different agreement, than the one contained in this paper, is reached, these arrangements are subject to modification.

In Annex 2 is given a detailed list of the valid key assignments and handlings in order to produce the euro.

A N N E X

Annex 1

Example illustrating the difficulty of modifying existing keyboards by displacement of character.

Suppose that on an Belgian *Azerty* keyboard euro is placed on current “µ” key (Level 1).

Displace the “µ” to put it on Level 3 on the “M” key :pressing AltGr+M would then produce the character “µ”.

However, the French *Azerty* keyboard (used by millions of users) and belonging to the **same** structural family (*Azerty*) would require another type of modification given the fact that the same character (“µ”) is on a **Level 2** position on a different key (i.e. whose physical location on the keyboard is different).

Thus on one *Azerty* keyboard (Belgian) the euro would be on a Level 1 position. On another *Azerty* keyboard (French) it would have to go on Level2 !

It is important to note that this type of problem is **general**. It affects many existing keyboards and rules out the various characters which may seem as appropriate candidates for a change of position. Moreover, special attention was paid to avoid disrupting the existing keyboard layouts by choosing too easy a solution.

Hence, to define a **Level 1** position would require the definition of a different position for almost every single keyboard. This is far from being a straightforward approach.

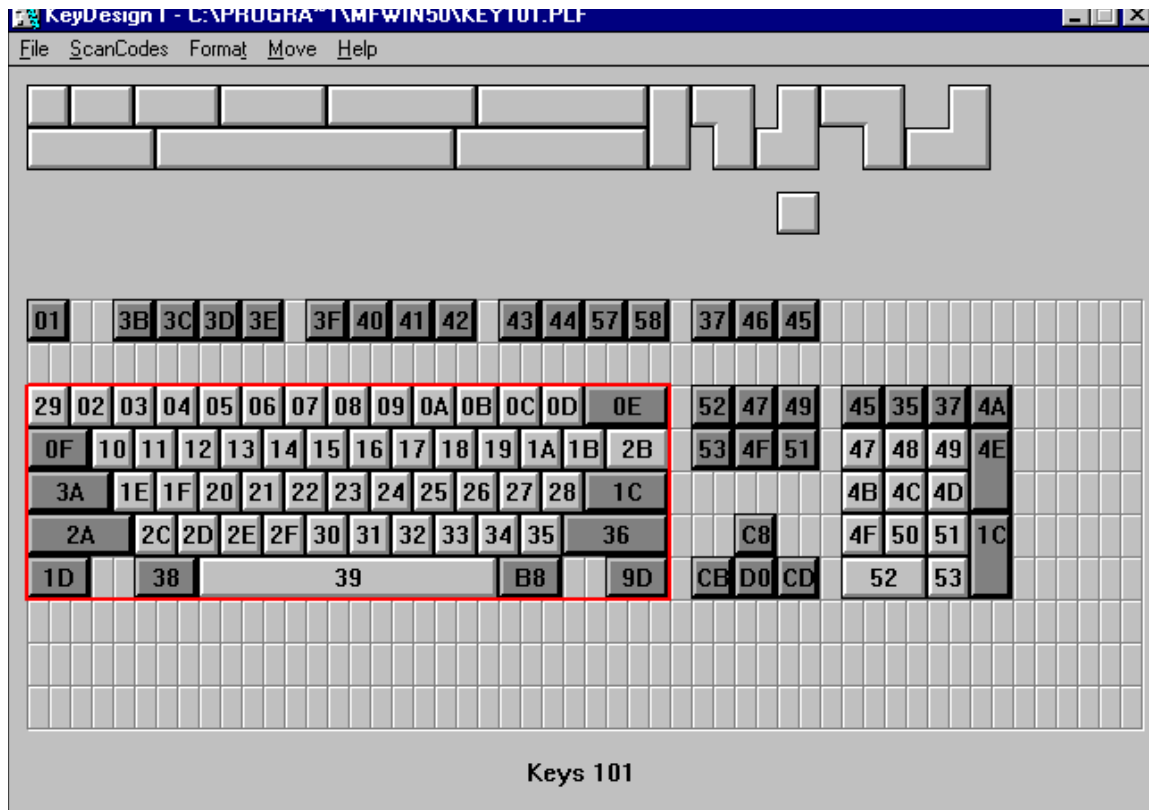
Annex 2

Position of \$ and £ on different keyboard layouts

The key codes on the following keyboard layout graphic are used to name the positions of the currency signs in the two tables below.

You can find one table sorted alphabetically and a second table sorted by the position of the \$ sign.

In the second table the second column shows whether there are two different keyboard layouts for one language (e.g. there exists a Swiss German and a Swiss French layout, which have no differences concerning the currency signs).



	Signs on AltGr+E	\$				£			
		Normal	Shift	AltGr	Shift AltGr	Normal	Shift	AltGr	Shift AltGr
Arabic			05						
Belgian		1B					2B		
British	é		05				04		
Bulgarian Cyrillic									
Bulgarian Latin			0B						
Byelo- russian									
Canadian multiling.			05					¥, 15	04
Croatian			05						
Czech				27					
Czech Querty				05					
Danish				05				04	
Dutch			05					08	
Estonian				05				04	
Finnish				05				04	
French		1B					1B		
French Canadian			05					04	
German			05						
Greek IBM 319			05				04		
Hebrew			05						
Hungarian				27					
Icelandic			05						

	Signs on AltGr+e	\$				£			
		Normal	Shift	AltGr	Shift AltGr	Normal	Shift	AltGr	Shift AltGr
Irish	É		05				04		
Italian			05				04		
Japanese	?	¥	05						
Korean	?	W B2	05						
Latin American			05						
Latvian	Latin: ã		05		05				
Norweg.				05				04	
Polish				27					
Portugu.	Brazil: °		05					04	
Romanian				27					
Russian									
Serbian			05						
Slovak				27					
Slovenian			05						
Spanish			05						
Swedish				05				04	
Swiss		2B					2B		
Turkish-F			05					19	
Turk.-Q				05					
Ukrainian									
US			05						
US- Dvorak			05						
US intern.	é		05					¥ 0C	05

	Number of layouts	\$				£			
		Normal	Shift	AltGr	Shift AltGr	Normal	Shift	AltGr	Shift AltGr
Bulgarian Cyrillic									
Byelo-russian									
Russian									
Ukrainian									
Arabic			05						
Croatian			05						
German			05						
Hebrew			05						
Icelandic			05						
Japanese	2		05						
Korean			05						
Latin American			05						
Latvian	2		05		05				
Serbian			05						
Slovenian			05						
Spanish			05						
US			05						
US-Dvorak			05						
British			05				04		
Greek IBM 319	2		05				04		
Irish			05				04		
Italian			05				04		
French Canadian			05					04	
Portugu.	2		05					04	
Dutch			05					08	

	Number of layouts	\$				£			
		Normal	Shift	AltGr	Shift AltGr	Normal	Shift	AltGr	Shift AltGr
Turkish-F			05					19	
Canadian multiling.			05						04
US intern.			05						05
Czech Querty				05					
Turk.-Q				05					
Danish				05				04	
Estonian				05				04	
Finnish				05				04	
Norweg.				05				04	
Swedish				05				04	
Bulgarian Latin			0B						
Belgian		1B					2B		
French		1B					1B		
Swiss	2	2B					2B		
Czech				27					
Hungar.				27					
Polish				27					
Romanian				27					
Slovak	2			27					

Result:

	Nowhere	Normal	Shift	AltGr	Shift AltGr
\$	4	4	29	13	1
£	29	0	9	10	2

The current placement of the euro on the EC Keyboards in the new EC NTP environment (Microsoft's Windows NT v4)

KEY COMBINATION	COUNTRY	COUNTRY/KEY
AltGr+4	Irish	IR
AltGr+4	Latvia	LV
AltGr+4	Latvia-QWERTY	LV1
AltGr+4	United Kingdom	UK
AltGr+5	Danish	DA
AltGr+5	Estonia	EST
AltGr+5	Finnish	FI
AltGr+5	Faroese	FO
AltGr+5	Icelandic	IC
AltGr+5	Italian	IT
AltGr+5	Italian 142	IT142
AltGr+5	Norwegian	NO
AltGr+5	Portuguese KBD163	- PO
AltGr+5	Spanish	SP
AltGr+5	Swedish	SW
AltGr+5	US-International	USX
AltGr+Epsilon	Greek	HE
AltGr+Epsilon	Greek IBM 220	HE220
AltGr+ Epsilon	Greek IBM 319	HE319
AltGr+ Epsilon	Greek IBM 220 Latin	HELA2
AltGr+ Epsilon	Greek IBM 319 Latin	HELA3

AltGr+5	Greek Latin	GKL
AltGr+e	Czech 101	CZ1
AltGr+e	Czech_Programmer's	CZ2
AltGr+e	French	FR
AltGr+e	German	GR
AltGr+e	German_IBM	GR1
AltGr+e	Lithuania	LT
AltGr+e	Lithuanian_New	LT1
AltGr+e	Macedonian_Cyrillic	MAC
AltGr+e	Dutch - KBD143	NE
AltGr+e	Swiss French	SF
AltGr+e	Swiss German	SG
AltGr+e	Slovak	SL
AltGr+e	Slovak(QWERTY)	SL1
AltGr+e	Turkish F 440	TUF
AltGr+e	Turkish Q 179	TUQ
AltGr+e	Serbian_Cyrillic	YCC
AltGr+e	Serbian_Latin	YCL
AltGr+u	Hungarian	HU
AltGr+u	Hungarian 101	HU1
AltGr+u	Polish	PL
AltGr+u	Polish Programmer's	PL1