Requirements for support of Sami languages in data processing

Gáibádus sámegiela sáhttit geavahit dihtoris

Krav om støtte for samiske språk innen databehandling

Vaatimus tietojenkäsittelyn saamenkielisestä tuesta

SÁMEDIGGI SAMETINGET

Gáibádus sámegiela sáhttit geavahit dihtoris

Dokumeanta, mii lea dás mielddusin, cealká daid unnimus gáibádusaid mat dorjot sámegiela dihtorastimis. Dát guoská sámi čálamearkkaide ja boallobeavdečovdosii dáid giellajoavkkuid várás: davvisámegiella-, julev- ja oarjelsámegiella, anáraš- ja nuoralašgiella ja buotlágan bargobirrasiidda dego omd. Microsoft "Windows", Apple "Macintosh", Unix systemii jnv. Ulbmil lea ahte dokumeanta doaibmá informašuvdnan industriijaide ja maiddái vejolaš standardiserenbarggu vuođđun. Dán sáhttá maid atnit referánsadokumeantan IT-skáhppomiid oktavuođas.

Dokumeanta lea ovddiduvvon Sámi parlamentáralaš ráđđái maŋŋel čoahkkima gaskkal Suoma, Norgga ja Ruoŧa sámeáššiid ovddasvástideaddji stáhtaráđiid ja dáid riikkaid Sámedikkiid presideanttaid, ulbmilin lei guorahallat vejolašvuođaid doarjut sámegiela dihtorastimis. Evttohus sáddejuvvui gulaskuddamii geassemánus 2002, ja boahtán gulaskuddancealkámušaid vuođul lea Sámi parlamentáralaš ráđi stivra dohkkehan loahpalaš dokumeantta čoahkkimis 05.10.2002.

Dokumeantta sáhttá máŋŋel dievasmahttit boallobeavdečovdosiin mii heive anáraš- ja/dahje nuortalašgillii.

Requirements for support of Sami languages in data processing

The attached document states the minimum requirements for support of the Sami languages in IT. It covers Sami character sets and keyboard layout requirements for the North, Lule, South, Inari and Skolt languages, and for all kinds of platforms e.g. Microsoft "Windows", Apple "Macintosh", Unix systems etc It is intended as information for industry, and as basis for possible work in standardization. It can also be used as a reference document in purchasing.

The document was developed for the Sami Parliamentary Council, as a result of a decision by the Finnish, Norwegian and Swedish Ministers responsible for Sami issues and the Presidents of the three Sami Parliaments to investigate Sami language support in IT. A draft was sent out for comments in June 2002, and the document was adopted, with changes resulting from the comments received, by the Board of the Sami Parliamentary Council on Oct. 5th, 2002.
The document may later become complemented with keyboard layouts for Inari and/or Skolt Sami.

Krav om støtte for samiske språk innen databehandling

Det vedlagte dokument uttrykker de minimumskrav om støtte for samiske språk innen databehandling. Dette gjelder samisk tegnsett og tastaturoppsett for språkgruppene nord-, lules-, sør-, enare- og skoltesamisk og for alle slags plattformer f.eks Microsoft "Windows", Apple "Macintosh", Unix systems m.m. Det er hensikten at dokumentet skal tjene som informasjon overfor industrien og også som basis for eventuelt standardiseringsarbeid. Det kan også bli benyttet som et referansedokument i forbindelse med IT – anskaffelser.

Dokumentet er utviklet for Samisk parlamentarisk råd etter en beslutning i møte mellom de ansvarlige ministere for samiske spørsmål i Finland, Norge og Sverige og de respektive sametingspresidenter om å undersøke mulighetene om støtte for samiske språk innen databehandling. Et utkast var sendt til høring i juni 2002, og på bakgrunn av innkomne høringsuttalelser, er et endelig dokument fastsatt i styret for Samisk parlamentarisk råd i møte 5. oktober 2002.
Dokumentet kan senere komme til å bli komplettert med tastaturoppsett for enare- og /eller skoltesamisk.
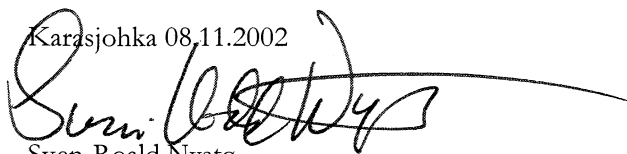
Vaatimus tietojenkäsittelyn saamenkielisestä tuesta

Oheinen dokumentti esittää vähemmäisvaatimuksen saamenkieliestä tuesta tietojenkäsittelyssä. Tämä koskee saamenkielen erityiskirjaisimia ja näppäimistöjä sekä kaikenlaisia käyttöjärjestelmiä kuten Microsoftin "Windows", Applen "Macintosh", Unix systeemi jne. Pohjois- ja eteläsaamen, luulajan, inarin ja koltansaamen kieliryhmille. Tarkoituksena on, että dokumentti toimii informaationa teollisuudelle sekä mahdollisen standardisointityön perustana.

Dokumentti on tehty Saamelaiselle parlamentaariselle neuvostolle sen päätöksen mukaisesti, joka tehtiin Suomen, Norjan ja Suomen saamelaiskysymyksistä päättävien ministereiden ja maiden saamelaiskäräjien puheenjohtajien kesken pidetyssä kokouksessa, jossa tutkittiin mahdollisuuksia saamenkielisen tuen järjestämiseksi tietojenkäsittelyssä. Ehdotus lähetettiin lausuntokierrokselle kesäkuussa 2002, ja saapuneitten kausuntojen perusteella laadittiin lopullinen dokumentti Saamelaisen parlamentaarisen neuvoston kokouksessa 05.10.2002.

Dokumenttia tullaan mahdollisesti myöhemmin täydentämään inarin – ja/tai koltansaamenkieleen sopivalla näppäimistöllä.

Karasjohka 08.11.2002

Sven-Roald Nystø
presideanta / president / presidentti

REGERINGSKANSLIET

Jordbruksdepartementet

Utdrag ur protokoll fört vid möte mellan ministrarna ansvariga för samiska frågor i Sverige, Norge och Finland och sametingspresidenterna i Sverige, Norge och Finland, Helsingfors den 13 november 2002

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3. Stöd för samiska språk i databehandling

Ministrarna och sametingspresidenterna i Finland, Norge och Sverige är överens om att det av Samiskt parlamentariskt råd fastställda dokumentet "Requirements for support of Sami languages in IT" utgör ett underlag i fråga om stöd för samiska språk inom databehandling. Nationellt standardiseringsarbete inom området bör drivas i samråd med Sametingen. Behovet av att definiera IT-tekniska s.k. "locales" för samiska språken bör uppmärksammas i standardiseringsarbetet.

Dataindustrin uppmanas att beakta rådets dokument samt förekommande standarder och snarast påbörja arbete för att införa stöd för samiska språk i sina produkter. Vederbörande myndigheter, institutioner och organisationer bör vid IT-upphandling ställa krav på stöd för samiska språk. Nordiska ämbetsmannaorganet för samiska frågor skall i samråd med Samiskt parlamentariskt råd följa ärendets fortsatta utveckling.

Johannes Koskinen
Justitieminister
Finland

Erna Solberg
Kommunal- och
regionalminister
Norge

Ann-Christin Nykvist
Jordbruksminister
Sverige

Irja Seurujärvi-Kari
Sametingets vice
Ordförande
Finland

Sven Roald Nystö
Sametingspresident
Norge

Lars-Anders Baer
Styrelseordförande för
Sametinget
Sverige

Extract from the minutes of a meeting between the ministers responsible for Sami affairs in Sweden, Norway and Finland and the presidents of the Sami Parliaments in Sweden, Norway and Finland, Helsinki, 13 November 2002

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3. Support for Sami languages in data processing

The ministers and the presidents of the Sami Parliaments in Finland, Norway and Sweden agree that the document adopted by the Sami Parliamentary Council entitled "Requirements for support of Sami languages in IT" constitutes a basic document where the issue of support for Sami languages in data processing is concerned. National standardisation projects in this area should be conducted in consultation with the Sami Parliaments. In connection with standardisation, attention should be given to the need to define IT "locales" for Sami languages.

The computer industry is called upon to take account of the Council document and available standards and to embark upon efforts to introduce support for Sami languages in industry products as soon as possible. The authorities, institutions and organisations concerned should make support for Sami languages a requirement in connection with IT procurement. The Nordic Government Officials Body for Sami Affairs (Nordiska ämbetsmannaorganet för samiska frågor) shall follow further developments in this matter in consultation with the Sami Parliamentary Council.

Johannes Koskinen Minister of Justice Finland	Erna Solberg Minister of Local Government and Regional Development Norway	Ann-Christin Nykvist Minister for Agriculture, Food and Fisheries Sweden
Irja Seurujärvi-Kari Vice President of the Sami Parliament Finland	Sven Roald Nystö President of the Sami Parliament Norway	Lars-Anders Baer President of the Sami Parliament Sweden

Mildosat / Vedlegg / Attachment

Requirements for support of Sami languages in IT

Foreword

Purpose of document

This document is intended to serve as an authoritative source of information for the IT industry and also as a basis for work in formal standardization, as regards the IT requirements of the Sami languages in Finland, Norway and Sweden.

Further, it is intended for use as a reference document in purchasing situations. It has therefore been written in standard-type style and structure.

Problems of Sami-language use in IT

Data processing of text in the Sami languages has always been problematical, since they require some letters that are not used in the majority languages of the countries of the Sami population, i.e. Finland, Norway and Sweden. (Russia has a Sami population also, but it uses the Cyrillic script for writing, and is therefore not covered by this document.) As the number of Sami-language computer users is, in an international perspective, comparatively small the main companies in computer industry have not developed solutions to this problem.

Some special solutions have emerged from smaller companies. In particular, a state-financed project in Norway in 1997 resulted in solutions for the "Windows" and "Macintosh" computer environments. These solutions have been made available as "freeware", and have been quite important in facilitating Sami information interchange. However, such solutions must be seen as temporary. Only when the main computer companies decide to include full support of the Sami languages in their product offerings will the problem become finally solved.

Apart from the size of the Sami-language market, a factor that has delayed industry development of Sami language support is that official documentation on the IT needs of the Sami languages, in a form that can be readily used by industry, has been lacking. This lack is the primary reason for the development of this document.

Standardization activities

The IT needs of the Sami languages have been given extensive attention by the standards organizations of Finland, Norway and Sweden. In particular, the Swedish "Statskontoret" has produced its Technical Standards TN35 and TN36 that define the needs of the Sami languages used in Sweden as regards character representation ("coding"), keyboard layouts and fonts. Those documents, however, do not cover the Skolt and Inari Sami languages used in Finland.

Work on a standard covering the general Sami-language IT needs has been proposed in the European standardization CEN. Further, some coordinated work is in planning in the Finnish, Norwegian and Swedish standardizations. The Sami Parliamentary Council, however, has come to the conclusion that this document needs to be produced anyway, since the ultimate responsibilty for declaring the needs of the Sami languages – and therefore of their support in IT – rests with the representatives of the Sami populations of Finland, Norway and Sweden.

Contents

Important – please read!

The Board of the Sami Parliamentary Council has adopted this document, thereby approving its contents. However, neither the Sami Parliamentary Council nor any of the Nordic Sami Parliaments accept any liabilities, financial or otherwise, in any way connected with the use of the contents of the document.

Support for Sami languages in IT

1   Scope

This document defines the minimum IT requirements applicable to the alphabets of the Sami languages written in the Latin script. A background on those languages, as relevant to the contents of the document, is given in Annex B.

Only requirements relating to present-day common use of the languages are defined. Special IT applications, e.g. linguistic and bibliographical, may have additional requirements that are outside the scope of this document, and therefore not covered by it.

The document has been developed by decision of the three Nordic Sami Parliaments, as information intended primarily for the IT industry, and also as a basis for possible future formal standardization. Its contents and general layout therefore follows common practices for IT standards.

The document is also intended to be immediately usable as a base reference in purchasing. Since it however specifies only minimum requirements, references need generally be made also to formal standards and/or other material. Information on the use of this document in purchasing is given in Annex A.

It shall be particularly noted that, while several alternatives for satisfying the IT support requirements of the Sami languages are specified in this document, it contains no recommendations for selection of alternatives in purchasing. The user of the document must decide the selection for each situation, considering what local and/or higher-level IT policies apply.

The requirements are applicable to three common computer environments, namely ISO/IEC 8859-compatible (e.g. Unix systems), Microsoft "Windows", and Apple "Macintosh", for both 8-bit and multi-octet coding schemes.

Acknowledgment: "Macintosh" is a trademark of Apple Computer, Inc. "Windows" is a trademark of Microsoft Corporation. These trademarks are registered in Finland, Norway and Sweden and other jurisdictions.

Requirements on character sets, character coding, keyboard functional layouts and fonts are specified. The document is however intended to be useable in a wide range of purchasing situations, from acquisition of complete systems to individual system components, like e.g. keyboards. Therefore, the applicability of the requirements varies with the situation, and must be considered if the document is referred to in purchasing.

The requirements relate to data processing computer systems. They are not intended to be generally applicable to communications systems (e.g. mobile telephony text messaging).

2   Implementation levels

This document defines two levels of implementation:

Basic level satisfying the requirements of the three Sami languages with the largest number of speakers, i.e. North, Lule and South Sami; and

Extended-alphabet level satisfying the requirements of these three languages, and additionally Skolt and Inari Sami.

This division into two levels is intended to facilitate implementations, and thereby to secure a wider industry support, for cases where only basic-level may be necessary. It shall **not** be interpreted as a "ranking" of the Sami languages, which are all of equal importance; see Annex A.

3   Requirements

3.1   Scope of requirements

In this section are stated the requirements that a computer system shall comply with to be in accordance with this document.

It must be noticed, however, that the various components of a computer system may have differing degrees of language support. For instance, the operating system may be capable of handling a larger character set than can be input through the keyboard.

The requirements in this document may consequently be inadequate to ensure sufficient total functionality for specific situations. Therefore, when referring to this document in purchasing it will in general be necessary to also specify additional requirements.

3.2   Character set

The character repertoire to be handled by operating systems shall contain as a minimum:

a)   The characters of registration no. 6 of the ISO "International register of coded character sets to be used with escape sequences", ISO-IR 6; and additionally

b)   the letters áÁ čČ đĐ éÉ ïÏ ŋŊ šŠ ŧŦ üÜ žŽ æÆ äÄ øØ öÖ åÅ; and

c) for the extended-alphabet level, additionally the letters âÂ ȝ͡ȝ ǯ͡ǯ ǧǦ ǥǤ ǩǨ õÕ and the character "acute accent".

For a specification of these characters according to ISO/IEC 10646-1:2000 see Annex C.

Notes:

1. The coding scheme of ISO-IR 6 is identical to the scheme defined in ISO/IEC 646:1991 as the "International Reference Version" (IRV). It is also coding-wise identical to ASCII, "American Standard Code for Information Interchange".

2. At the time of publication of this document, the register is available at Internet site www.itscj.ipsj.or.jp/ISO-IR.

3. In purchasing situations, characters in addition to those of items a–b or a–c will normally need to be specified. Such a specification can take the form of an enumeration of the additional characters, or a reference to a specific coding scheme e.g. "The additional characters of ISO/IEC 8859-1".

4. The character "acute accent" is required on the extended-alphabet level for use as the Skolt Sami "soft mark".

3.3 Character coding

3.3.1 8-bit coding, basic implementation level

For 8859-type computer environments (e.g. most Unix systems), coding according to one of the following two schemes shall be used:

– ISO-IR 6 + ISO-IR 157

– ISO-IR 6 + ISO-IR 209

Note: The scheme ISO-IR 6 + ISO-IR 157 is coding-wise identical to ISO/IEC 8859-10 "Latin-6". The code tables of the schemes are presented in Annex D.

For Windows and Macintosh computer 8-bit environments, coding according to Annex E shall be used.

Note: These two coding schemes were developed in a software project sponsored by Norway in 1997. They are neither endorsed nor supported by Apple Computer and Microsoft Corporation.

3.3.2 8-bit coding, extended-alphabet implementation level

The first 8859-type scheme specified in 3.3.1 above can be extended by the inclusion of the registered set ISO-IR 158 or the set ISO-IR 209 as a G2 or G3 set according to ISO/IEC 2022:1994.

Note: The code tables of the schemes are presented in Annex D.

The second of the 8859-type schemes, ISO-IR 6 + ISO-IR 209, as well as the Windows and Macintosh schemes specified in Annex E, all contain the letters required for extended-alphabet implementation.

3.3.3 Multiple-octet coding

For multiple-octet coding, ISO/IEC 10646-1:2000 coding shall be used.

Notes:

1. ISO/IEC 10646-1:2000 includes all characters needed for extended-alphabet implementation.

2. To the extent relevant for normal data processing within the scope of this document, this scheme is identical to "Unicode" version 3.

3.3.4 Identification of character coding used

In data interchange, the coding used shall be mutually agreed between sender and receiver; or identified either by separate documentation accompanying the data or by identification data forming part of the information.

For such identification data the rules according to ISO/IEC 2022:1994 are recommended. The following identification sequences then apply for 8-bit basic-level coding (ESC designates the escape character, hex 1B; complete hex sequences in brackets):

ISO-IR 6 + 157:   ESC (B   ESC - V   [1B 28 42   1B 2D 56]
ISO-IR 6 + 209:   ESC (B   ESC - h   [1B 28 42   1B 2D 68]

For 8-bit extended-alphabet implementation the first case is complemented with a sequence to designate the selected additional set as a G2 or G3 set (see ISO/IEC 2022:1994):

ISO-IR 158 as G2 set: ESC . X   [1B 2E 58]
ISO-IR 158 as G3 set: ESC / X   [1B 2F 58]

ISO-IR 209 as G2 set: ESC . h   [1B 2E 68]
ISO-IR 209 as G3 set: ESC / h   [1B 2F 68]

For ISO/IEC 10646-1:2000 coding, different identification sequences apply depending on what coding form and 10646 implementation level that has been chosen (see the the standard for a description):

UCS-2 level 1:   ESC % . @   [1B 25 2E 40]
UCS-2 level 2:   ESC % . C   [1B 25 2E 43]
UCS-2 level 3:   ESC % . E   [1B 25 2E 45]

UCS-4 level 1:   ESC % . A   [1B 25 2E 41]
UCS-4 level 2:   ESC % . D   [1B 25 2E 44]
UCS-4 level 3:   ESC % . F   [1B 25 2E 46]

The codings for Windows and Macintosh 8-bit environments specified in Annex E cannot be identified according to ISO/IEC 2022:1994, since those schemes do not conform to the principles of the standard. Use of these schemes in data interchange therefore requires mutual agreement or accompanying documentation.

3.4   Keyboard layouts

3.4.1   Alternatives

Two different user situations with need for Sami letters in data processing exist, a "Sami-language" and a "Majority-language" situation (see also Annex A). This document therefore defines keyboard layouts for both "Sami keyboards" and "Majority-language keyboards with Sami letters", for the two implementation levels.

The Sami keyboard layouts are intended for use where keyboard input is generally in one of the Sami languages. They are however designed for ease-of-use primarily for the North Sami language.

Note: These layouts are according to the "Levi" and "Macintosh utilities for Sami" implementations for North Sami, with minor changes.

The majority-language layouts are identical to the present national – i.e. Norwegian and Finnish/Swedish – standard layouts, except that a Sami letter "group" has been added (see ISO/IEC 9995-1:1994 for the concept of "group"). These layouts are intended for use where keyboard input is generally in the majority language, but where a need for input of Sami letters exists also. They may also be preferable for some of the Sami languages.

Notes:

1. The principle for the positioning of the Sami letters on keys is that the letters are allocated, in the keyboard alternative group, to "typographically corresponding" keys, i.e. the letter áÁ to the aA key, čČ to the cC key etc.

2. For the extended-alphabet layout, the positioning of the letter gG is different from the Sami extended layout, since it is intended to keep the hH key available for possible future standardization (Finnish Romani ňȞ).

The layouts are specified in Annex F and G, and illustrated in Annex H. Only the positioning of the alphabetic characters is prescribed. Positioning of the letters éÉ üÜ is not specified; these can be made available either "pre-composed" or by diacritic–letter sequence inputs.

Note: In purchasing situations, required positioning of non-alphabetic characters (like the digits 0-9) and possibly also pre-composed letters éÉ and/or üÜ should be specified. This can be done explicitly, or by reference to some documented and more complete layout, e.g. a national keyboard standard.

3.4.2   Letter generation

The layouts in Annex F and G specify all required letters "pre-composed". However, letters consisting of a basic letter and a diacritical mark – e.g. áÁ – could possibly also be "composed" by a diacritic-letter key sequence, when the diacritic is available in the layout proposed by a vendor.

This document specifies no requirements on the availability of diacritics (as "dead keys"). In purchasing, however, such additional requirements could be specified, explicitly or by reference to some other document; and/or information given on what letters can acceptably be made available by this method (e.g. "Letters âÂ and õÕ may be made available as diacritic-letter sequences").

3.5   Fonts

As a minimum, systems shall provide support in three types of fonts for the complete character set specified in a purchasing situation; i.e. the character set of 3.2 items a and b for basic-level implementations, and a, b and c for extended-alphabet implementation level; as well as any additional characters specified in the purchasing.

The three font-types are fixed-spacing (e.g. "Courier"), variable-spacing non-serif (e.g. "Helvetica"), and variable-spacing serif (e.g. "Times"). In each font the variations regular, italic, bold and bold-italic are required.

Annex A
Document background

A.1 Status of this document

In the November 7th 2001 annual meeting of the Finnish, Norwegian and Swedish ministers responsible for Sami issues and the Presidents of the three Sami Parliaments, it was decided to investigate "the possibility of creating a common Nordic solution as regards support of the Sami languages in computer use". Therefore, a draft for this document was developed, and on June 19th 2002 the Board of the Sami Parliamentary Council decided to have it sent out for comments.

Received comments gave cause for some changes to the text of the draft. The comments and proposed changes were presented in the meeting of the Board of the Sami Parliamentary Council Oct. 5th 2002. The Board decided to adopt the document with the proposed changes.

It is important to note that the document is of an informative nature, and has in itself no imperative status; see Foreword and clause 1 "Scope". It can however be used as a reference in purchasing, in which case additional requirements may need to be specified; see "Examples of use of document in purchasing" below.

A.2 Coverage of languages

It shall be noted that the document's definition of two implementation levels – "basic" and "extended-alphabet" – does **not** imply any "ranking" of languages. All Sami languages are of equal importance (including those in Russia, which are however written in the Cyrillic script, and therefore outside the scope of this document).

It shall also be noted that, in specific purchasing situations, it may be advisable to require extended-alphabet repertoire and fonts even if keyboard functionality on the basic level is sufficient, to ensure correct display/printing of "imported" data possibly containing Skolt and Inari letters; see "Examples of use of document in purchasing" below.

A.3 Policies for character coding

This document does not declare any data-processing policies, preferences or recommendations. Such declarations would be outside its scope, which is to specify what alternatives exist for the IT support of the Sami languages.

As regards coding, only fundamental schemes are covered. Transformation formats, like e.g. UTF-8, are in this connection considered application-oriented, and are therefore not dealt with in the text.

The industry direction in character coding is towards multi-octet schemes, and that direction should ultimately provide the solution to today's multi-lingual problems in IT. At the moment, however, vital areas in data processing may still be dependent on 8-bit coding schemes.

It is therefore desirable that policies for "migration" from today's 8-bit situation to multi-octet coding are declared by authorities and other organisations. This document however does not, and cannot, declare such policies.

A.4 Document limitation

This document, as stated in its "Scope" clause, specifies only **minimum** IT requirements for support of Sami languages, for present-day common use. The reason for this "minimal" approach is that Sami-language data processing may vary widely in detail requirements, and flexibility for individual purchasing situations should therefore be provided. In the specific case, stricter requirements may naturally need to be prescribed in addition to those of this document; see "Examples of use of document in purchasing" below.

A.5 Keyboard considerations

For text-writing in Sami, a keyboard layout with convenient access to all the letters of the language is desirable. On the other hand, in an application where only input of some Sami names in a national-language database is needed, the usual national keyboard layout will be preferable, provided that the Sami letters can also be input from it.

For some such national-language applications it will be desirable that the Sami letters are available "ready-made". In other applications it may be acceptable that Sami letters are input by typing "dead-key" diacritics followed by base letters. For instance, immediate access to a complete pre-composed letter á could be needed in some cases, but typing acuteaccent–a could be accepted in others. This document therefore specifies alternative requirements, for the user of it to choose from.

Further, one aim of the document is to provide industry with a certain freedom in detail implementations; taking into account that, if specifications are too strict, they could hinder some software development, and/or possibly favour certain vendors at the expense of others.

Therefore the document specifies only the keyboard positioning of the letters, not of other characters. In

the marketplace, some variations in the positioning of such other characters exist between manufacturers, and also between products (e.g. desktop vs. laptop computers). Such variations are sometimes made necessary by specific keyboard functionalities not foreseen when standards were developed.

A.6   Examples of use of document in purchasing

This clause contains some examples of how the document can be used as a reference in purchasing. These examples do **not** state requirements, and are **not** intended as recommendations. Local conditions and existing policies, local or higher-level, e.g. as regards choice of coding systems, will decide the exact use of the document in the specific case.

Three hypothetical purchasing situations are exemplified:

1. System for a Norwegian-language application, with input needed of North, Lule and South Sami letters, as well as "import" (but not keyboard input) of data containing Skolt and Inari Sami letters. Unicode/10646 coding has been decided on for the system.

2. System for a Sami-language application in Sweden, with the "Levi" keyboard positioning of digits and special characters required. Both 8-bit and Unicode/10646 coding is acceptable.

3. System for a Finnish-language application with need for handling of the letters of all Sami languages, as well as the letters of Finnish Romani. Unicode/10646 is preferred, but not required.

A common introductory text could be used for the three situations:

A.6.1   Common introductory text

This **Request for Proposal** relates to the acquisition of a system for xxxxx, intended to be used for xxxxx and consisting of the following components:

[Specification of hardware/software]

The system shall conform to the requirements stated in the Sami Parliamentary Council document **Sámediggi 01/850-51** and also to the requirements stated in the following documents, as applicable:

[Ergonomics, safety etc.]

In addition to the requirements in Sami Parliamentary Council document **Sámediggi 01/850-51**, the following applies:

A.6.2   System-specific text for Norwegian-language system supporting Sami

Character set: Shall contain basic and extended-alphabet level repertoire and the additional characters of ISO/IEC 8859-1.

Character coding: Multiple-octet coding is required.

Keyboard layout: Majority-language basic level Norwegian layout is required (tables G.1 and G.2). Sami letters may be made available pre-composed or as diacritic-letter sequences. Character positionings not specified in the document should agree with current commercially-available Norwegian keyboards, but deviations can be accepted. Key markings with the Sami letters is desirable, but not required.

Fonts: The complete repertoires for the fonts proposed shall be specified in the proposal. The specification may take the form of references to publicly available or included proprietary documents. (Note that the fonts shall contain all Skolt and Inari letters, even though they are not required in the keyboard layout.)

A.6.3   System-specific text for Sami-language system in Sweden

Character set: Shall contain basic and extended-alphabet level repertoire, and the additional characters of ISO/IEC 8859-1.

Character coding: Either 8-bit or multiple-octet coding may be proposed.

Keyboard layout: Sami-language extended-alphabet layout for Finland/Sweden is required (tables F.1 and F.3). Pre-composed letters are required. Character positionings not specified in the document should conform to the "Datautvalget" layout (attached), but some deviations may be accepted. All keys shall be marked with the characters available. Exact positioning of the markings shall be specified in the proposal (keytops and/or keyfronts).

Fonts: The complete repertoires for the fonts proposed shall be specified in the proposal (the specification may take the form of references to publicly available or included proprietary documents). The capital letter Eng shall have the correct Sami-alphabet shape (capital N with a "tail").

A.6.4 System-specific text for Finnish-language system supporting Sami and Finnish Romani

Character set: Shall contain basic and extended-alphabet level repertoire, the additional characters of ISO/IEC 8859-1, and capital and small letter H WITH CARON (U+021E and U+021F).

Character coding: Either 8-bit or multiple-octet coding may be proposed. Multiple-octet is preferred.

Keyboard layout: Majority-language extended-alphabet Finnish/Swedish layout is required (tables G.1 and G.3). Sami and Finnish Romani letters may be made available pre-composed or as diacritic-letter sequences. Character positionings not specified in the document should conform to Swedish Standard SS 66 22 41 edition 2, but some deviations may be accepted. Small and capital letter H WITH CARON shall be assigned to key position C06 in the alternative group. All keys shall be marked with the characters available. Exact positioning of the markings shall be specified in the proposal (keytops and/or key-fronts).

Fonts: The complete repertoires for the fonts proposed shall be specified in the proposal (the specification may take the form of references to publicly available or included proprietary documents). The capital letter Eng shall have the correct Sami-alphabet shape (capital N with a "tail").

Annex B
Background on Sami languages

In linguistic literature various descriptions of Sami can be found: as a collection of languages, as one or more (usually three) language(s) with a number of dialects, and as a language with "varieties". For simplicity, in this document only the term "language(s)" is used. This, however, is not intended to imply any particular linguistic definition, which would be outside the scope of the document.

The Sami languages used in Finland, Norway and Sweden are all written in the Latin alphabet. Sami languages in Russia use the Cyrillic alphabet.

The main Sami language is North Sami, spoken in all three Nordic countries. In Norway and Sweden, Lule and South Sami are also in use. Further, in the two countries Pite and Ume Sami are historically relevant, although they are probably nowadays extinct in speaking. In Finland, Skolt and Inari Sami are used also.

The orthographies of the languages differ, with varying requirements on letter repertoire. For historical reasons the respective majority-language alphabets became the basis for the writing of Sami. Therefore in Norway the letters æÆ (in Lule and South Sami) and øØ (in South Sami) are used, but in Finland and Sweden the corresponding äÄ and öÖ.

In addition to the letters of the majority-language alphabets, the following Sami letters are needed:

North: áÁ čČ đĐ ŋŊ šŠ ŧŦ žŽ
Lule: áÁ ŋŊ
South: ïÏ
Skolt: âÂ čČ ȝȝ ǯǯ đĐ ǧǦ ǥǤ ǩǨ ŋŊ õÕ šŠ žŽ
Inari: áÁ âÂ čČ đĐ ŋŊ šŠ žŽ

For Lule Sami the original writing of the letter Ŋ is N with acute accent. The writing Ñ can also be seen in

data processing, due to its availability – as different from Ŋ and N-accent – in standard computer coding schemes. Orthographically the writing Ñ is however incorrect.

In Skolt Sami the "soft sign" ´ is also part of the alphabet. It has been somewhat uncertain which standardized character this sign should be equated to, especially since the printed shapes of possible characters vary between fonts. In this document the "soft sign" is equated to the character "acute accent".

The ortographies seem somewhat uncertain for the Pite and Ume Sami languages, but it appears that they can be written correctly using the Norwegian- and Swedish-language alphabets if the specifically North and South Sami letters are also available.

In addition to the letters listed above, a number of "historical" letters can be found in various texts. These are however not covered by this document, which is intended to be applicable only to today's common use of the languages.

Legislation exists in all three countries securing the rights of Sami-speaking individuals to communicate with governmental authorities and judicial bodies in their own language. The legislations do however not make distinctions between the Sami languages.

For complete data processing coverage of the Sami languages used in Norway and Sweden, only basic-level implementation is necessary (see clause 2 "Implementation levels"). Basic level may also be sufficient for some situations in Finland. For complete language coverage, extended-alphabet implementation is however necessary. Decisions on what level that should be required in a purchasing situation must therefore be considered very carefully (see also Annex A).

Annex C

Specification of required characters in addition to ISO-IR 6

Basic implementation level

á LATIN SMALL LETTER A WITH ACUTE (U+00E1)
Á LATIN CAPITAL LETTER A WITH ACUTE (U+00C1)
č LATIN SMALL LETTER C WITH CARON (U+010D)
Č LATIN CAPITAL LETTER C WITH CARON (U+010C)
đ LATIN SMALL LETTER D WITH STROKE (U+0111)
Đ LATIN CAPITAL LETTER D WITH STROKE (U+0110)
é LATIN SMALL LETTER E WITH ACUTE (U+00E9)
É LATIN CAPITAL LETTER E WITH ACUTE (U+00C9)
ï LATIN SMALL LETTER I WITH DIAERESIS (U+00EF)
Ï LATIN CAPITAL LETTER I WITH DIAERESIS (U+00CF)
ŋ LATIN SMALL LETTER ENG (U+014B)
Ŋ LATIN CAPITAL LETTER ENG (U+014A)
š LATIN SMALL LETTER S WITH CARON (U+0161)
Š LATIN CAPITAL LETTER S WITH CARON (U+0160)
ŧ LATIN SMALL LETTER T WITH STROKE (U+0167)

Ŧ LATIN CAPITAL LETTER T WITH STROKE (U+0166)
ü LATIN SMALL LETTER U WITH DIAERESIS (U+00FC)
Ü LATIN CAPITAL LETTER U WITH DIAERESIS (U+00DC)
ž LATIN SMALL LETTER Z WITH CARON (U+017E)
Ž LATIN CAPITAL LETTER Z WITH CARON (U+017D)
å LATIN SMALL LETTER A WITH RING ABOVE (U+00E5)
Å LATIN CAPITAL LETTER A WITH RING ABOVE (U+00C5)
æ LATIN SMALL LETTER AE (U+00E6)
Æ LATIN CAPITAL LETTER AE (U+00C6)
ä LATIN SMALL LETTER A WITH DIAERESIS (U+00E4)
Ä LATIN CAPITAL LETTER A WITH DIAERESIS (U+00C4)
ø LATIN SMALL LETTER O WITH STROKE (U+00F8)
Ø LATIN CAPITAL LETTER O WITH STROKE (U+00D8)
ö LATIN SMALL LETTER O WITH DIAERESIS (U+00F6)
Ö LATIN CAPITAL LETTER O WITH DIAERESIS (U+00D6)

Additions for extended-alphabet implementation level

â LATIN SMALL LETTER A WITH CIRCUMFLEX (U+00E2)
Â LATIN CAPITAL LETTER A WITH CIRCUMFLEX (U+00C2)
ʒ LATIN SMALL LETTER EZH (U+0292)
Ʒ LATIN CAPITAL LETTER EZH (U+01B7)
ǯ LATIN SMALL LETTER EZH WITH CARON (U+01EF)
Ǯ LATIN CAPITAL LETTER EZH WITH CARON (U+01EE)
ǧ LATIN SMALL LETTER G WITH CARON (U+01E7)
Ǧ LATIN CAPITAL LETTER G WITH CARON (U+01E6)

ǥ LATIN SMALL LETTER G WITH STROKE (U+01E5)
Ǥ LATIN CAPITAL LETTER G WITH STROKE (U+01E4)
ǩ LATIN SMALL LETTER K WITH CARON (U+01E9)
Ǩ LATIN CAPITAL LETTER K WITH CARON (U+01E8)
õ LATIN SMALL LETTER O WITH TILDE (U+00F5)
Õ LATIN CAPITAL LETTER O WITH TILDE (U+00D5)
´ ACUTE ACCENT (U+00B4)

Annex D

Referenced ISO-IR coding schemes

Several of the ISO-IR registrations referenced in clause 3 were developed before ISO/IEC 10646 existed. The character names in those registrations are therefore not harmonized with the names in ISO/IEC 10646-1:2000, and character identifications (on the form U+xxxx) are missing.

In this annex the code tables of all registrations referred to are presented, with the character names harmonized with ISO 10646-1:2000 and corresponding identifiers added.

Table D.1 – Character set ISO-IR 6

Bit combi-nation	Hex	Identifier	Name	Bit combi-nation	Hex	Identifier	Name
02/00	20	U+0020	SPACE	05/00	50	U+0050	LATIN CAPITAL LETTER P
02/01	21	U+0021	EXCLAMATION MARK	05/01	51	U+0051	LATIN CAPITAL LETTER Q
02/02	22	U+0022	QUOTATION MARK	05/02	52	U+0052	LATIN CAPITAL LETTER R
02/03	23	U+0023	NUMBER SIGN	05/03	53	U+0053	LATIN CAPITAL LETTER S
02/04	24	U+0024	DOLLAR SIGN	05/04	54	U+0054	LATIN CAPITAL LETTER T
02/05	25	U+0025	PERCENT SIGN	05/05	55	U+0055	LATIN CAPITAL LETTER U
02/06	26	U+0026	AMPERSAND	05/06	56	U+0056	LATIN CAPITAL LETTER V
02/07	27	U+0027	APOSTROPHE	05/07	57	U+0057	LATIN CAPITAL LETTER W
02/08	28	U+0028	LEFT PARENTHESIS	05/08	58	U+0058	LATIN CAPITAL LETTER X
02/09	29	U+0029	RIGHT PARENTHESIS	05/09	59	U+0059	LATIN CAPITAL LETTER Y
02/10	2A	U+002A	ASTERISK	05/10	5A	U+005A	LATIN CAPITAL LETTER Z
02/11	2B	U+002B	PLUS SIGN	05/11	5B	U+005B	LEFT SQUARE BRACKET
02/12	2C	U+002C	COMMA	05/12	5C	U+005C	REVERSE SOLIDUS
02/13	2D	U+002D	HYPHEN-MINUS	05/13	5D	U+005D	RIGHT SQUARE BRACKET
02/14	2E	U+002E	FULL STOP	05/14	5E	U+005E	CIRCUMFLEX ACCENT
02/15	2F	U+002F	SOLIDUS	05/15	5F	U+005F	LOW LINE
03/00	30	U+0030	DIGIT ZERO	06/00	60	U+0060	GRAVE ACCENT
03/01	31	U+0031	DIGIT ONE	06/01	61	U+0061	LATIN SMALL LETTER A
03/02	32	U+0032	DIGIT TWO	06/02	62	U+0062	LATIN SMALL LETTER B
03/03	33	U+0033	DIGIT THREE	06/03	63	U+0063	LATIN SMALL LETTER C
03/04	34	U+0034	DIGIT FOUR	06/04	64	U+0064	LATIN SMALL LETTER D
03/05	35	U+0035	DIGIT FIVE	06/05	65	U+0065	LATIN SMALL LETTER E
03/06	36	U+0036	DIGIT SIX	06/06	66	U+0066	LATIN SMALL LETTER F
03/07	37	U+0037	DIGIT SEVEN	06/07	67	U+0067	LATIN SMALL LETTER G
03/08	38	U+0038	DIGIT EIGHT	06/08	68	U+0068	LATIN SMALL LETTER H
03/09	39	U+0039	DIGIT NINE	06/09	69	U+0069	LATIN SMALL LETTER I
03/10	3A	U+003A	COLON	06/10	6A	U+006A	LATIN SMALL LETTER J
03/11	3B	U+003B	SEMICOLON	06/11	6B	U+006B	LATIN SMALL LETTER K
03/12	3C	U+003C	LESS-THAN SIGN	06/12	6C	U+006C	LATIN SMALL LETTER L
03/13	3D	U+003D	EQUALS SIGN	06/13	6D	U+006D	LATIN SMALL LETTER M
03/14	3E	U+003E	GREATER-THAN SIGN	06/14	6E	U+006E	LATIN SMALL LETTER N
03/15	3F	U+003F	QUESTION MARK	06/15	6F	U+006F	LATIN SMALL LETTER O
04/00	40	U+0040	COMMERCIAL AT	07/00	70	U+0070	LATIN SMALL LETTER P
04/01	41	U+0041	LATIN CAPITAL LETTER A	07/01	71	U+0071	LATIN SMALL LETTER Q
04/02	42	U+0042	LATIN CAPITAL LETTER B	07/02	72	U+0072	LATIN SMALL LETTER R
04/03	43	U+0043	LATIN CAPITAL LETTER C	07/03	73	U+0073	LATIN SMALL LETTER S
04/04	44	U+0044	LATIN CAPITAL LETTER D	07/04	74	U+0074	LATIN SMALL LETTER T
04/05	45	U+0045	LATIN CAPITAL LETTER E	07/05	75	U+0075	LATIN SMALL LETTER U
04/06	46	U+0046	LATIN CAPITAL LETTER F	07/06	76	U+0076	LATIN SMALL LETTER V
04/07	47	U+0047	LATIN CAPITAL LETTER G	07/07	77	U+0077	LATIN SMALL LETTER W
04/08	48	U+0048	LATIN CAPITAL LETTER H	07/08	78	U+0078	LATIN SMALL LETTER X
04/09	49	U+0049	LATIN CAPITAL LETTER I	07/09	79	U+0079	LATIN SMALL LETTER Y
04/10	4A	U+004A	LATIN CAPITAL LETTER J	07/10	7A	U+007A	LATIN SMALL LETTER Z
04/11	4B	U+004B	LATIN CAPITAL LETTER K	07/11	7B	U+007B	LEFT CURLY BRACKET
04/12	4C	U+004C	LATIN CAPITAL LETTER L	07/12	7C	U+007C	VERTICAL LINE
04/13	4D	U+004D	LATIN CAPITAL LETTER M	07/13	7D	U+007D	RIGHT CURLY BRACKET
04/14	4E	U+004E	LATIN CAPITAL LETTER N	07/14	7E	U+007E	TILDE
04/15	4F	U+004F	LATIN CAPITAL LETTER O				

Table D.2 – Character set ISO-IR 157

Bit combi-nation	Hex	Identifier	Name
10/00	A0	U+00A0	NO-BREAK SPACE
10/01	A1	U+0104	LATIN CAPITAL LETTER A WITH OGONEK
10/02	A2	U+0112	LATIN CAPITAL LETTER E WITH MACRON
10/03	A3	U+0122	LATIN CAPITAL LETTER G WITH CEDILLA
10/04	A4	U+012A	LATIN CAPITAL LETTER I WITH MACRON
10/05	A5	U+0128	LATIN CAPITAL LETTER I WITH TILDE
10/06	A6	U+0136	LATIN CAPITAL LETTER K WITH CEDILLA
10/07	A7	U+00A7	SECTION SIGN
10/08	A8	U+013B	LATIN CAPITAL LETTER L WITH CEDILLA
10/09	A9	U+0110	LATIN CAPITAL LETTER D WITH STROKE
10/10	AA	U+0160	LATIN CAPITAL LETTER S WITH CARON
10/11	AB	U+0166	LATIN CAPITAL LETTER T WITH STROKE
10/12	AC	U+017D	LATIN CAPITAL LETTER Z WITH CARON
10/13	AD	U+00AD	SOFT HYPHEN
10/14	AE	U+016A	LATIN CAPITAL LETTER U WITH MACRON
10/15	AF	U+014A	LATIN CAPITAL LETTER ENG
11/00	B0	U+00B0	DEGREE SIGN
11/01	B1	U+0105	LATIN SMALL LETTER A WITH OGONEK
11/02	B2	U+0113	LATIN SMALL LETTER E WITH MACRON
11/03	B3	U+0123	LATIN SMALL LETTER G WITH CEDILLA
11/04	B4	U+012B	LATIN SMALL LETTER I WITH MACRON
11/05	B5	U+0129	LATIN SMALL LETTER I WITH TILDE
11/06	B6	U+0137	LATIN SMALL LETTER K WITH CEDILLA
11/07	B7	U+00B7	MIDDLE DOT
11/08	B8	U+013C	LATIN SMALL LETTER L WITH CEDILLA
11/09	B9	U+0111	LATIN SMALL LETTER D WITH STROKE
11/10	BA	U+0161	LATIN SMALL LETTER S WITH CARON
11/11	BB	U+0167	LATIN SMALL LETTER T WITH STROKE
11/12	BC	U+017E	LATIN SMALL LETTER Z WITH CARON
11/13	BD	U+2015	HORIZONTAL BAR
11/14	BE	U+016B	LATIN SMALL LETTER U WITH MACRON
11/15	BF	U+014B	LATIN SMALL LETTER ENG
12/00	C0	U+0100	LATIN CAPITAL LETTER A WITH MACRON
12/01	C1	U+00C1	LATIN CAPITAL LETTER A WITH ACUTE
12/02	C2	U+00C2	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
12/03	C3	U+00C3	LATIN CAPITAL LETTER A WITH TILDE
12/04	C4	U+00C4	LATIN CAPITAL LETTER A WITH DIAERESIS
12/05	C5	U+00C5	LATIN CAPITAL LETTER A WITH RING ABOVE
12/06	C6	U+00C6	LATIN CAPITAL LETTER AE
12/07	C7	U+012E	LATIN CAPITAL LETTER I WITH OGONEK
12/08	C8	U+010C	LATIN CAPITAL LETTER C WITH CARON
12/09	C9	U+00C9	LATIN CAPITAL LETTER E WITH ACUTE
12/10	CA	U+0118	LATIN CAPITAL LETTER E WITH OGONEK
12/11	CB	U+00CB	LATIN CAPITAL LETTER E WITH DIAERESIS
12/12	CC	U+0116	LATIN CAPITAL LETTER E WITH DOT ABOVE
12/13	CD	U+00CD	LATIN CAPITAL LETTER I WITH ACUTE
12/14	CE	U+00CE	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
12/15	CF	U+00CF	LATIN CAPITAL LETTER I WITH DIAERESIS
13/00	D0	U+00D0	LATIN CAPITAL LETTER ETH
13/01	D1	U+0145	LATIN CAPITAL LETTER N WITH CEDILLA
13/02	D2	U+014C	LATIN CAPITAL LETTER O WITH MACRON
13/03	D3	U+00D3	LATIN CAPITAL LETTER O WITH ACUTE
13/04	D4	U+00D4	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
13/05	D5	U+00D5	LATIN CAPITAL LETTER O WITH TILDE
13/06	D6	U+00D6	LATIN CAPITAL LETTER O WITH DIAERESIS
13/07	D7	U+0168	LATIN CAPITAL LETTER U WITH TILDE
13/08	D8	U+00D8	LATIN CAPITAL LETTER O WITH STROKE
13/09	D9	U+0172	LATIN CAPITAL LETTER U WITH OGONEK
13/10	DA	U+00DA	LATIN CAPITAL LETTER U WITH ACUTE
13/11	DB	U+00DB	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
13/12	DC	U+00DC	LATIN CAPITAL LETTER U WITH DIAERESIS
13/13	DD	U+00DD	LATIN CAPITAL LETTER Y WITH ACUTE
13/14	DE	U+00DE	LATIN CAPITAL LETTER THORN
13/15	DF	U+00DF	LATIN SMALL LETTER SHARP S
14/00	E0	U+0101	LATIN SMALL LETTER A WITH MACRON
14/01	E1	U+00E1	LATIN SMALL LETTER A WITH ACUTE
14/02	E2	U+00E2	LATIN SMALL LETTER A WITH CIRCUMFLEX
14/03	E3	U+00E3	LATIN SMALL LETTER A WITH TILDE
14/04	E4	U+00E4	LATIN SMALL LETTER A WITH DIAERESIS
14/05	E5	U+00E5	LATIN SMALL LETTER A WITH RING ABOVE
14/06	E6	U+00E6	LATIN SMALL LETTER AE
14/07	E7	U+012F	LATIN SMALL LETTER I WITH OGONEK
14/08	E8	U+010D	LATIN SMALL LETTER C WITH CARON
14/09	E9	U+00E9	LATIN SMALL LETTER E WITH ACUTE
14/10	EA	U+0119	LATIN SMALL LETTER E WITH OGONEK
14/11	EB	U+00EB	LATIN SMALL LETTER E WITH DIAERESIS
14/12	EC	U+0117	LATIN SMALL LETTER E WITH DOT ABOVE
14/13	ED	U+00ED	LATIN SMALL LETTER I WITH ACUTE
14/14	EE	U+00EE	LATIN SMALL LETTER I WITH CIRCUMFLEX
14/15	EF	U+00EF	LATIN SMALL LETTER I WITH DIAERESIS
15/00	F0	U+00F0	LATIN SMALL LETTER ETH
15/01	F1	U+0146	LATIN SMALL LETTER N WITH CEDILLA
15/02	F2	U+014D	LATIN SMALL LETTER O WITH MACRON
15/03	F3	U+00F3	LATIN SMALL LETTER O WITH ACUTE
15/04	F4	U+00F4	LATIN SMALL LETTER O WITH CIRCUMFLEX
15/05	F5	U+00F5	LATIN SMALL LETTER O WITH TILDE
15/06	F6	U+00F6	LATIN SMALL LETTER O WITH DIAERESIS
15/07	F7	U+0169	LATIN SMALL LETTER U WITH TILDE
15/08	F8	U+00F8	LATIN SMALL LETTER O WITH STROKE
15/09	F9	U+0173	LATIN SMALL LETTER U WITH OGONEK
15/10	FA	U+00FA	LATIN SMALL LETTER U WITH ACUTE
15/11	FB	U+00FB	LATIN SMALL LETTER U WITH CIRCUMFLEX
15/12	FC	U+00FC	LATIN SMALL LETTER U WITH DIAERESIS
15/13	FD	U+00FD	LATIN SMALL LETTER Y WITH ACUTE
15/14	FE	U+00FE	LATIN SMALL LETTER THORN
15/15	FF	U+0138	LATIN SMALL LETTER KRA

Table D.3 – Character set ISO-IR 158

Bit combination	Hex	Identifier	Name
10/00	A0	U+00B4	ACUTE ACCENT
10/01	A1		*(This position not used)*
10/02	A2		*(This position not used)*
10/03	A3		*(This position not used)*
10/04	A4		*(This position not used)*
10/05	A5		*(This position not used)*
10/06	A6		*(This position not used)*
10/07	A7		*(This position not used)*
10/08	A8		*(This position not used)*
10/09	A9		*(This position not used)*
10/10	AA		*(This position not used)*
10/11	AB		*(This position not used)*
10/12	AC		*(This position not used)*
10/13	AD		*(This position not used)*
10/14	AE		*(This position not used)*
10/15	AF		*(This position not used)*
11/00	B0	U+0312	COMBINING TURNED COMMA ABOVE
11/01	B1		*(This position not used)*
11/02	B2		*(This position not used)*
11/03	B3		*(This position not used)*
11/04	B4		*(This position not used)*
11/05	B5		*(This position not used)*
11/06	B6		*(This position not used)*
11/07	B7		*(This position not used)*
11/08	B8		*(This position not used)*
11/09	B9		*(This position not used)*
11/10	BA		*(This position not used)*
11/11	BB		*(This position not used)*
11/12	BC		*(This position not used)*
11/13	BD		*(This position not used)*
11/14	BE		*(This position not used)*
11/15	BF		*(This position not used)*
12/00	C0	U+0102	LATIN CAPITAL LETTER A WITH BREVE
12/01	C1	U+00C0	LATIN CAPITAL LETTER A WITH GRAVE
12/02	C2	U+01DE	LATIN CAPITAL LETTER A WITH DIAERESIS AND MACRON
12/03	C3	U+01E0	LATIN CAPITAL LETTER A WITH DOT ABOVE AND MACRON
12/04	C4	U+01E2	LATIN CAPITAL LETTER AE WITH MACRON
12/05	C5	U+0114	LATIN CAPITAL LETTER E WITH BREVE
12/06	C6	U+00C8	LATIN CAPITAL LETTER E WITH GRAVE
12/07	C7	U+01E4	LATIN CAPITAL LETTER G WITH STROKE
12/08	C8	U+01E6	LATIN CAPITAL LETTER G WITH CARON
12/09	C9	U+01E8	LATIN CAPITAL LETTER K WITH CARON
12/10	CA	U+014E	LATIN CAPITAL LETTER O WITH BREVE
12/11	CB	U+00D2	LATIN CAPITAL LETTER O WITH GRAVE
12/12	CC	U+01EA	LATIN CAPITAL LETTER O WITH OGONEK
12/13	CD	U+01EC	LATIN CAPITAL LETTER O WITH OGONEK AND MACRON
12/14	CE	U+01B7	LATIN CAPITAL LETTER EZH
12/15	CF	U+01EE	LATIN CAPITAL LETTER EZH WITH CARON

Bit combination	Hex	Identifier	Name
13/00	D0		*(This position not used)*
13/01	D1		*(This position not used)*
13/02	D2		*(This position not used)*
13/03	D3		*(This position not used)*
13/04	D4		*(This position not used)*
13/05	D5		*(This position not used)*
13/06	D6		*(This position not used)*
13/07	D7		*(This position not used)*
13/08	D8		*(This position not used)*
13/09	D9		*(This position not used)*
13/10	DA		*(This position not used)*
13/11	DB		*(This position not used)*
13/12	DC		*(This position not used)*
13/13	DD		*(This position not used)*
13/14	DE		*(This position not used)*
13/15	DF		*(This position not used)*
14/00	E0	U+0103	LATIN SMALL LETTER A WITH BREVE
14/01	E1	U+00E0	LATIN SMALL LETTER A WITH GRAVE
14/02	E2	U+01DF	LATIN SMALL LETTER A WITH DIAERESIS AND MACRON
14/03	E3	U+01E1	LATIN SMALL LETTER A WITH DOT ABOVE AND MACRON
14/04	E4	U+01E3	LATIN SMALL LETTER AE WITH MACRON
14/05	E5	U+0115	LATIN SMALL LETTER E WITH BREVE
14/06	E6	U+00E8	LATIN SMALL LETTER E WITH GRAVE
14/07	E7	U+01E5	LATIN SMALL LETTER G WITH STROKE
14/08	E8	U+01E7	LATIN SMALL LETTER G WITH CARON
14/09	E9	U+01E9	LATIN SMALL LETTER K WITH CARON
14/10	EA	U+014F	LATIN SMALL LETTER O WITH BREVE
14/11	EB	U+00F2	LATIN SMALL LETTER O WITH GRAVE
14/12	EC	U+01EB	LATIN SMALL LETTER O WITH OGONEK
14/13	ED	U+01ED	LATIN SMALL LETTER O WITH OGONEK AND MACRON
14/14	EE	U+0292	LATIN SMALL LETTER EZH
14/15	EF	U+01EF	LATIN SMALL LETTER EZH WITH CARON
15/00	F0		*(This position not used)*
15/01	F1		*(This position not used)*
15/02	F2		*(This position not used)*
15/03	F3		*(This position not used)*
15/04	F4		*(This position not used)*
15/05	F5		*(This position not used)*
15/06	F6		*(This position not used)*
15/07	F7		*(This position not used)*
15/08	F8		*(This position not used)*
15/09	F9		*(This position not used)*
15/10	FA		*(This position not used)*
15/11	FB		*(This position not used)*
15/12	FC		*(This position not used)*
15/13	FD		*(This position not used)*
15/14	FE		*(This position not used)*
15/15	FF		*(This position not used)*

Table D.4 – Character set ISO-IR 209

Bit combi-nation	Hex	Identifier	Name	Bit combi-nation	Hex	Identifier	Name
10/00	A0	U+00A0	NO-BREAK SPACE	13/00	D0	U+00D0	LATIN CAPITAL LETTER ETH
10/01	A1	U+010C	LATIN CAPITAL LETTER C WITH CARON	13/01	D1	U+00D1	LATIN CAPITAL LETTER N WITH TILDE
10/02	A2	U+010D	LATIN SMALL LETTER C WITH CARON	13/02	D2	U+00D2	LATIN CAPITAL LETTER O WITH GRAVE
10/03	A3	U+0110	LATIN CAPITAL LETTER D WITH STROKE	13/03	D3	U+00D3	LATIN CAPITAL LETTER O WITH ACUTE
10/04	A4	U+0111	LATIN SMALL LETTER D WITH STROKE	13/04	D4	U+00D4	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
10/05	A5	U+01E4	LATIN CAPITAL LETTER G WITH STROKE	13/05	D5	U+00D5	LATIN CAPITAL LETTER O WITH TILDE
10/06	A6	U+01E5	LATIN SMALL LETTER G WITH STROKE	13/06	D6	U+00D6	LATIN CAPITAL LETTER O WITH DIAERESIS
10/07	A7	U+00A7	SECTION SIGN	13/07	D7	U+00D7	MULTIPLICATION SIGN
10/08	A8	U+01E6	LATIN CAPITAL LETTER G WITH CARON	13/08	D8	U+00D8	LATIN CAPITAL LETTER O WITH STROKE
10/09	A9	U+00A9	COPYRIGHT SIGN	13/09	D9	U+00D9	LATIN CAPITAL LETTER U WITH GRAVE
10/10	AA	U+01E7	LATIN SMALL LETTER G WITH CARON	13/10	DA	U+00DA	LATIN CAPITAL LETTER U WITH ACUTE
10/11	AB	U+021E	LATIN CAPITAL LETTER H WITH CARON	13/11	DB	U+00DB	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
10/12	AC	U+01E8	LATIN CAPITAL LETTER K WITH CARON	13/12	DC	U+00DC	LATIN CAPITAL LETTER U WITH DIAERESIS
10/13	AD	U+00AD	SOFT HYPHEN	13/13	DD	U+00DD	LATIN CAPITAL LETTER Y WITH ACUTE
10/14	AE	U+01E9	LATIN SMALL LETTER K WITH CARON	13/14	DE	U+00DE	LATIN CAPITAL LETTER THORN
10/15	AF	U+014A	LATIN CAPITAL LETTER ENG	13/15	DF	U+00DF	LATIN SMALL LETTER SHARP S
11/00	B0	U+00B0	DEGREE SIGN	14/00	E0	U+00E0	LATIN SMALL LETTER A WITH GRAVE
11/01	B1	U+014B	LATIN SMALL LETTER ENG	14/01	E1	U+00E1	LATIN SMALL LETTER A WITH ACUTE
11/02	B2	U+0160	LATIN CAPITAL LETTER S WITH CARON	14/02	E2	U+00E2	LATIN SMALL LETTER A WITH CIRCUMFLEX
11/03	B3	U+0161	LATIN SMALL LETTER S WITH CARON	14/03	E3	U+00E3	LATIN SMALL LETTER A WITH TILDE
11/04	B4	U+00B4	ACUTE ACCENT	14/04	E4	U+00E4	LATIN SMALL LETTER A WITH DIAERESIS
11/05	B5	U+0166	LATIN CAPITAL LETTER T WITH STROKE	14/05	E5	U+00E5	LATIN SMALL LETTER A WITH RING ABOVE
11/06	B6	U+00B6	PILCROW SIGN	14/06	E6	U+00E6	LATIN SMALL LETTER AE
11/07	B7	U+00B7	MIDDLE DOT	14/07	E7	U+00E7	LATIN SMALL LETTER C WITH CEDILLA
11/08	B8	U+0167	LATIN SMALL LETTER T WITH STROKE	14/08	E8	U+00E8	LATIN SMALL LETTER E WITH GRAVE
11/09	B9	U+017D	LATIN CAPITAL LETTER Z WITH CARON	14/09	E9	U+00E9	LATIN SMALL LETTER E WITH ACUTE
11/10	BA	U+017E	LATIN SMALL LETTER Z WITH CARON	14/10	EA	U+00EA	LATIN SMALL LETTER E WITH CIRCUMFLEX
11/11	BB	U+021F	LATIN SMALL LETTER H WITH CARON	14/11	EB	U+00EB	LATIN SMALL LETTER E WITH DIAERESIS
11/12	BC	U+01B7	LATIN CAPITAL LETTER EZH	14/12	EC	U+00EC	LATIN SMALL LETTER I WITH GRAVE
11/13	BD	U+0292	LATIN SMALL LETTER EZH	14/13	ED	U+00ED	LATIN SMALL LETTER I WITH ACUTE
11/14	BE	U+01EE	LATIN CAPITAL LETTER EZH WITH CARON	14/14	EE	U+00EE	LATIN SMALL LETTER I WITH CIRCUMFLEX
11/15	BF	U+01EF	LATIN SMALL LETTER EZH WITH CARON	14/15	EF	U+00EF	LATIN SMALL LETTER I WITH DIAERESIS
12/00	C0	U+00C0	LATIN CAPITAL LETTER A WITH GRAVE	15/00	F0	U+00F0	LATIN SMALL LETTER ETH
12/01	C1	U+00C1	LATIN CAPITAL LETTER A WITH ACUTE	15/01	F1	U+00F1	LATIN SMALL LETTER N WITH TILDE
12/02	C2	U+00C2	LATIN CAPITAL LETTER A WITH CIRCUMFLEX	15/02	F2	U+00F2	LATIN SMALL LETTER O WITH GRAVE
12/03	C3	U+00C3	LATIN CAPITAL LETTER A WITH TILDE	15/03	F3	U+00F3	LATIN SMALL LETTER O WITH ACUTE
12/04	C4	U+00C4	LATIN CAPITAL LETTER A WITH DIAERESIS	15/04	F4	U+00F4	LATIN SMALL LETTER O WITH CIRCUMFLEX
12/05	C5	U+00C5	LATIN CAPITAL LETTER A WITH RING ABOVE	15/05	F5	U+00F5	LATIN SMALL LETTER O WITH TILDE
12/06	C6	U+00C6	LATIN CAPITAL LETTER AE	15/06	F6	U+00F6	LATIN SMALL LETTER O WITH DIAERESIS
12/07	C7	U+00C7	LATIN CAPITAL LETTER C WITH CEDILLA	15/07	F7	U+00F7	DIVISION SIGN
12/08	C8	U+00C8	LATIN CAPITAL LETTER E WITH GRAVE	15/08	F8	U+00F8	LATIN SMALL LETTER O WITH STROKE
12/09	C9	U+00C9	LATIN CAPITAL LETTER E WITH ACUTE	15/09	F9	U+00F9	LATIN SMALL LETTER U WITH GRAVE
12/10	CA	U+00CA	LATIN CAPITAL LETTER E WITH CIRCUMFLEX	15/10	FA	U+00FA	LATIN SMALL LETTER U WITH ACUTE
12/11	CB	U+00CB	LATIN CAPITAL LETTER E WITH DIAERESIS	15/11	FB	U+00FB	LATIN SMALL LETTER U WITH CIRCUMFLEX
12/12	CC	U+00CC	LATIN CAPITAL LETTER I WITH GRAVE	15/12	FC	U+00FC	LATIN SMALL LETTER U WITH DIAERESIS
12/13	CD	U+00CD	LATIN CAPITAL LETTER I WITH ACUTE	15/13	FD	U+00FD	LATIN SMALL LETTER Y WITH ACUTE
12/14	CE	U+00CE	LATIN CAPITAL LETTER I WITH CIRCUMFLEX	15/14	FE	U+00FE	LATIN SMALL LETTER THORN
12/15	CF	U+00CF	LATIN CAPITAL LETTER I WITH DIAERESIS	15/15	FF	U+00FF	LATIN SMALL LETTER Y WITH DIAERESIS

Annex E

Sami coding schemes for Windows and Macintosh

Table E.1 – Sami Windows-environment character set

Bit combination	Hex	Identifier	Name	Bit combination	Hex	Identifier	Name
08/00	80	U+20AC	EURO SIGN	12/00	C0	U+00C0	LATIN CAPITAL LETTER A WITH GRAVE
08/01	81		*(This position not used)*	12/01	C1	U+00C1	LATIN CAPITAL LETTER A WITH ACUTE
08/02	82	U+010C	LATIN CAPITAL LETTER C WITH CARON	12/02	C2	U+00C2	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
08/03	83	U+0192	LATIN SMALL LETTER F WITH HOOK	12/03	C3	U+00C3	LATIN CAPITAL LETTER A WITH TILDE
08/04	84	U+010D	LATIN SMALL LETTER C WITH CARON	12/04	C4	U+00C4	LATIN CAPITAL LETTER A WITH DIAERESIS
08/05	85	U+01B7	LATIN CAPITAL LETTER EZH	12/05	C5	U+00C5	LATIN CAPITAL LETTER A WITH RING ABOVE
08/06	86	U+0292	LATIN SMALL LETTER EZH	12/06	C6	U+00C6	LATIN CAPITAL LETTER AE
08/07	87	U+01EE	LATIN CAPITAL LETTER EZH WITH CARON	12/07	C7	U+00C7	LATIN CAPITAL LETTER C WITH CEDILLA
08/08	88	U+01EF	LATIN SMALL LETTER EZH WITH CARON	12/08	C8	U+00C8	LATIN CAPITAL LETTER E WITH GRAVE
08/09	89	U+0110	LATIN CAPITAL LETTER D WITH STROKE	12/09	C9	U+00C9	LATIN CAPITAL LETTER E WITH ACUTE
08/10	8A	U+0160	LATIN CAPITAL LETTER S WITH CARON	12/10	CA	U+00CA	LATIN CAPITAL LETTER E WITH CIRCUMFLEX
08/11	8B	U+2039	SINGLE LEFT-POINTING ANGLE QUOTATION MARK	12/11	CB	U+00CB	LATIN CAPITAL LETTER E WITH DIAERESIS
08/12	8C	U+0152	LATIN CAPITAL LIGATURE OE	12/12	CC	U+00CC	LATIN CAPITAL LETTER I WITH GRAVE
08/13	8D		*(This position not used)*	12/13	CD	U+00CD	LATIN CAPITAL LETTER I WITH ACUTE
08/14	8E		*(This position not used)*	12/14	CE	U+00CE	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
08/15	8F		*(This position not used)*	12/15	CF	U+00CF	LATIN CAPITAL LETTER I WITH DIAERESIS
09/00	90		*(This position not used)*	13/00	D0	U+00D0	LATIN CAPITAL LETTER ETH
09/01	91	U+2018	LEFT SINGLE QUOTATION MARK	13/01	D1	U+00D1	LATIN CAPITAL LETTER N WITH TILDE
09/02	92	U+2019	RIGHT SINGLE QUOTATION MARK	13/02	D2	U+00D2	LATIN CAPITAL LETTER O WITH GRAVE
09/03	93	U+201C	LEFT DOUBLE QUOTATION MARK	13/03	D3	U+00D3	LATIN CAPITAL LETTER O WITH ACUTE
09/04	94	U+201D	RIGHT DOUBLE QUOTATION MARK	13/04	D4	U+00D4	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
09/05	95	U+2022	BULLET	13/05	D5	U+00D5	LATIN CAPITAL LETTER O WITH TILDE
09/06	96	U+2013	EN DASH	13/06	D6	U+00D6	LATIN CAPITAL LETTER O WITH DIAERESIS
09/07	97	U+2014	EM DASH	13/07	D7	U+00D7	MULTIPLICATION SIGN
09/08	98	U+0111	LATIN SMALL LETTER D WITH STROKE	13/08	D8	U+00D8	LATIN CAPITAL LETTER O WITH STROKE
09/09	99	U+01E6	LATIN CAPITAL LETTER G WITH CARON	13/09	D9	U+00D9	LATIN CAPITAL LETTER U WITH GRAVE
09/10	9A	U+0161	LATIN SMALL LETTER S WITH CARON	13/10	DA	U+00DA	LATIN CAPITAL LETTER U WITH ACUTE
09/11	9B	U+203A	SINGLE RIGHT-POINTING ANGLE QUOTATION MARK	13/11	DB	U+00DB	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
09/12	9C	U+0153	LATIN SMALL LIGATURE OE	13/12	DC	U+00DC	LATIN CAPITAL LETTER U WITH DIAERESIS
09/13	9D		*(This position not used)*	13/13	DD	U+00DD	LATIN CAPITAL LETTER Y WITH ACUTE
09/14	9E		*(This position not used)*	13/14	DE	U+00DE	LATIN CAPITAL LETTER THORN
09/15	9F	U+0178	LATIN CAPITAL LETTER Y WITH DIAERESIS	13/15	DF	U+00DF	LATIN SMALL LETTER SHARP S
10/00	A0	U+00A0	NO-BREAK SPACE	14/00	E0	U+00E0	LATIN SMALL LETTER A WITH GRAVE
10/01	A1	U+01E7	LATIN SMALL LETTER G WITH CARON	14/01	E1	U+00E1	LATIN SMALL LETTER A WITH ACUTE
10/02	A2	U+01E4	LATIN CAPITAL LETTER G WITH STROKE	14/02	E2	U+00E2	LATIN SMALL LETTER A WITH CIRCUMFLEX
10/03	A3	U+00A3	POUND SIGN	14/03	E3	U+00E3	LATIN SMALL LETTER A WITH TILDE
10/04	A4	U+00A4	CURRENCY SIGN	14/04	E4	U+00E4	LATIN SMALL LETTER A WITH DIAERESIS
10/05	A5	U+01E5	LATIN SMALL LETTER G WITH STROKE	14/05	E5	U+00E5	LATIN SMALL LETTER A WITH RING ABOVE
10/06	A6	U+00A6	BROKEN BAR	14/06	E6	U+00E6	LATIN SMALL LETTER AE
10/07	A7	U+00A7	SECTION SIGN	14/07	E7	U+00E7	LATIN SMALL LETTER C WITH CEDILLA
10/08	A8	U+00A8	DIAERESIS	14/08	E8	U+00E8	LATIN SMALL LETTER E WITH GRAVE
10/09	A9	U+00A9	COPYRIGHT SIGN	14/09	E9	U+00E9	LATIN SMALL LETTER E WITH ACUTE
10/10	AA	U+021E	LATIN CAPITAL LETTER H WITH CARON	14/10	EA	U+00EA	LATIN SMALL LETTER E WITH CIRCUMFLEX
10/11	AB	U+00AB	LEFT-POINTING DOUBLE ANGLE QUOTATION MARK	14/11	EB	U+00EB	LATIN SMALL LETTER E WITH DIAERESIS
10/12	AC	U+00AC	NOT SIGN	14/12	EC	U+00EC	LATIN SMALL LETTER I WITH GRAVE
10/13	AD	U+00AD	SOFT HYPHEN	14/13	ED	U+00ED	LATIN SMALL LETTER I WITH ACUTE
10/14	AE	U+00AE	REGISTERED SIGN	14/14	EE	U+00EE	LATIN SMALL LETTER I WITH CIRCUMFLEX
10/15	AF	U+021F	LATIN SMALL LETTER H WITH CARON	14/15	EF	U+00EF	LATIN SMALL LETTER I WITH DIAERESIS
11/00	B0	U+00B0	DEGREE SIGN	15/00	F0	U+00F0	LATIN SMALL LETTER ETH
11/01	B1	U+00B1	PLUS-MINUS SIGN	15/01	F1	U+00F1	LATIN SMALL LETTER N WITH TILDE
11/02	B2	U+01E8	LATIN CAPITAL LETTER K WITH CARON	15/02	F2	U+00F2	LATIN SMALL LETTER O WITH GRAVE
11/03	B3	U+01E9	LATIN SMALL LETTER K WITH CARON	15/03	F3	U+00F3	LATIN SMALL LETTER O WITH ACUTE
11/04	B4	U+00B4	ACUTE ACCENT	15/04	F4	U+00F4	LATIN SMALL LETTER O WITH CIRCUMFLEX
11/05	B5	U+00B5	MICRO SIGN	15/05	F5	U+00F5	LATIN SMALL LETTER O WITH TILDE
11/06	B6	U+00B6	PILCROW SIGN	15/06	F6	U+00F6	LATIN SMALL LETTER O WITH DIAERESIS
11/07	B7	U+00B7	MIDDLE DOT	15/07	F7	U+00F7	DIVISION SIGN
11/08	B8	U+014A	LATIN CAPITAL LETTER ENG	15/08	F8	U+00F8	LATIN SMALL LETTER O WITH STROKE
11/09	B9	U+014B	LATIN SMALL LETTER ENG	15/09	F9	U+00F9	LATIN SMALL LETTER U WITH GRAVE
11/10	BA	U+0166	LATIN CAPITAL LETTER T WITH STROKE	15/10	FA	U+00FA	LATIN SMALL LETTER U WITH ACUTE
11/11	BB	U+00BB	RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK	15/11	FB	U+00FB	LATIN SMALL LETTER U WITH CIRCUMFLEX
11/12	BC	U+0167	LATIN SMALL LETTER T WITH STROKE	15/12	FC	U+00FC	LATIN SMALL LETTER U WITH DIAERESIS
11/13	BD	U+00BD	VULGAR FRACTION ONE HALF	15/13	FD	U+00FD	LATIN SMALL LETTER Y WITH ACUTE
11/14	BE	U+017D	LATIN CAPITAL LETTER Z WITH CARON	15/14	FE	U+00FE	LATIN SMALL LETTER THORN
11/15	BF	U+017E	LATIN SMALL LETTER Z WITH CARON	15/15	FF	U+00FF	LATIN SMALL LETTER Y WITH DIAERESIS

The "left half" of the Sami Windows coding table – i.e. bit combinations 02/00–07/14 – is identical to character set ISO-IR 6 (table D.1).

Table E.2 – Sami Macintosh-environment character set

Bit combination	Hex	Identifier	Name	Bit combination	Hex	Identifier	Name
08/00	80	U+00C4	LATIN CAPITAL LETTER A WITH DIAERESIS	12/00	C0	U+00BF	INVERTED QUESTION MARK
08/01	81	U+00C5	LATIN CAPITAL LETTER A WITH RING ABOVE	12/01	C1	U+00A1	INVERTED EXCLAMATION MARK
08/02	82	U+00C7	LATIN CAPITAL LETTER C WITH CEDILLA	12/02	C2	U+00AC	NOT SIGN
08/03	83	U+00C9	LATIN CAPITAL LETTER E WITH ACUTE	12/03	C3	U+221A	SQUARE ROOT
08/04	84	U+00D1	LATIN CAPITAL LETTER N WITH TILDE	12/04	C4	U+0192	LATIN SMALL LETTER F WITH HOOK (Florin sign)
08/05	85	U+00D6	LATIN CAPITAL LETTER O WITH DIAERESIS	12/05	C5	U+2248	ALMOST EQUAL TO
08/06	86	U+00DC	LATIN CAPITAL LETTER U WITH DIAERESIS	12/06	C6	U+021E	LATIN CAPITAL LETTER H WITH CARON
08/07	87	U+00E1	LATIN SMALL LETTER A WITH ACUTE	12/07	C7	U+00AB	LEFT-POINTING DOUBLE ANGLE QUOTATION MARK
08/08	88	U+00E0	LATIN SMALL LETTER A WITH GRAVE	12/08	C8	U+00BB	RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK
08/09	89	U+00E2	LATIN SMALL LETTER A WITH CIRCUMFLEX	12/09	C9	U+2026	HORIZONTAL ELLIPSIS
08/10	8A	U+00E4	LATIN SMALL LETTER A WITH DIAERESIS	12/10	CA	U+00A0	NO-BREAK SPACE
08/11	8B	U+00E3	LATIN SMALL LETTER A WITH TILDE	12/11	CB	U+00C0	LATIN CAPITAL LETTER A WITH GRAVE
08/12	8C	U+00E5	LATIN SMALL LETTER A WITH RING ABOVE	12/12	CC	U+00C3	LATIN CAPITAL LETTER A WITH TILDE
08/13	8D	U+00E7	LATIN SMALL LETTER C WITH CEDILLA	12/13	CD	U+00D5	LATIN CAPITAL LETTER O WITH TILDE
08/14	8E	U+00E9	LATIN SMALL LETTER E WITH ACUTE	12/14	CE	U+0152	LATIN CAPITAL LIGATURE OE
08/15	8F	U+00E8	LATIN SMALL LETTER E WITH GRAVE	12/15	CF	U+0153	LATIN SMALL LIGATURE OE
09/00	90	U+00EA	LATIN SMALL LETTER E WITH CIRCUMFLEX	13/00	D0	U+2013	EN DASH
09/01	91	U+00EB	LATIN SMALL LETTER E WITH DIAERESIS	13/01	D1	U+2014	EM DASH
09/02	92	U+00ED	LATIN SMALL LETTER I WITH ACUTE	13/02	D2	U+201C	LEFT DOUBLE QUOTATION MARK
09/03	93	U+00EC	LATIN SMALL LETTER I WITH GRAVE	13/03	D3	U+201D	RIGHT DOUBLE QUOTATION MARK
09/04	94	U+00EE	LATIN SMALL LETTER I WITH CIRCUMFLEX	13/04	D4	U+2018	LEFT SINGLE QUOTATION MARK
09/05	95	U+00EF	LATIN SMALL LETTER I WITH DIAERESIS	13/05	D5	U+2019	RIGHT SINGLE QUOTATION MARK
09/06	96	U+00F1	LATIN SMALL LETTER N WITH TILDE	13/06	D6	U+00F7	DIVISION SIGN
09/07	97	U+00F3	LATIN SMALL LETTER O WITH ACUTE	13/07	D7	U+021F	LATIN SMALL LETTER H WITH CARON
09/08	98	U+00F2	LATIN SMALL LETTER O WITH GRAVE	13/08	D8	U+00FF	LATIN SMALL LETTER Y WITH DIAERESIS
09/09	99	U+00F4	LATIN SMALL LETTER O WITH CIRCUMFLEX	13/09	D9	U+0178	LATIN CAPITAL LETTER Y WITH DIAERESIS
09/10	9A	U+00F6	LATIN SMALL LETTER O WITH DIAERESIS	13/10	DA	U+2044	FRACTION SLASH
09/11	9B	U+00F5	LATIN SMALL LETTER O WITH TILDE	13/11	DB	U+20AC	EURO SIGN
09/12	9C	U+00FA	LATIN SMALL LETTER U WITH ACUTE	13/12	DC	U+00D0	LATIN CAPITAL LETTER ETH
09/13	9D	U+00F9	LATIN SMALL LETTER U WITH GRAVE	13/13	DD	U+00F0	LATIN SMALL LETTER ETH
09/14	9E	U+00FB	LATIN SMALL LETTER U WITH CIRCUMFLEX	13/14	DE	U+00DE	LATIN CAPITAL LETTER THORN
09/15	9F	U+00FC	LATIN SMALL LETTER U WITH DIAERESIS	13/15	DF	U+00FE	LATIN SMALL LETTER THORN
10/00	A0	U+00DD	LATIN CAPITAL LETTER Y WITH ACUTE	14/00	E0	U+00FD	LATIN SMALL LETTER Y WITH ACUTE
10/01	A1	U+00B0	DEGREE SIGN	14/01	E1	U+00B7	MIDDLE DOT
10/02	A2	U+010C	LATIN CAPITAL LETTER C WITH CARON	14/02	E2	U+201A	SINGLE LOW-9 QUOTATION MARK
10/03	A3	U+00A3	POUND SIGN	14/03	E3	U+201E	DOUBLE LOW-9 QUOTATION MARK
10/04	A4	U+00A7	SECTION SIGN	14/04	E4	U+2030	PER MILLE SIGN
10/05	A5	U+2022	BULLET	14/05	E5	U+00C2	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
10/06	A6	U+00B6	PILCROW SIGN	14/06	E6	U+00CA	LATIN CAPITAL LETTER E WITH CIRCUMFLEX
10/07	A7	U+00DF	LATIN SMALL LETTER SHARP S	14/07	E7	U+00C1	LATIN CAPITAL LETTER A WITH ACUTE
10/08	A8	U+00AE	REGISTERED SIGN	14/08	E8	U+00CB	LATIN CAPITAL LETTER E WITH DIAERESIS
10/09	A9	U+00A9	COPYRIGHT SIGN	14/09	E9	U+00C8	LATIN CAPITAL LETTER E WITH GRAVE
10/10	AA	U+2122	TRADE MARK SIGN	14/10	EA	U+00CD	LATIN CAPITAL LETTER I WITH ACUTE
10/11	AB	U+00B4	ACUTE ACCENT	14/11	EB	U+00CE	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
10/12	AC	U+00A8	DIAERESIS	14/12	EC	U+00CF	LATIN CAPITAL LETTER I WITH DIAERESIS
10/13	AD	U+2260	NOT EQUAL TO	14/13	ED	U+00CC	LATIN CAPITAL LETTER I WITH GRAVE
10/14	AE	U+00C6	LATIN CAPITAL LETTER AE	14/14	EE	U+00D3	LATIN CAPITAL LETTER O WITH ACUTE
10/15	AF	U+00D8	LATIN CAPITAL LETTER O WITH STROKE	14/15	EF	U+00D4	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
11/00	B0	U+0110	LATIN CAPITAL LETTER D WITH STROKE	15/00	F0		APPLE LOGOTYPE
11/01	B1	U+014A	LATIN CAPITAL LETTER ENG	15/01	F1	U+00D2	LATIN CAPITAL LETTER O WITH GRAVE
11/02	B2	U+2264	LESS-THAN OR EQUAL TO	15/02	F2	U+00DA	LATIN CAPITAL LETTER U WITH ACUTE
11/03	B3	U+2265	GREATER-THAN OR EQUAL TO	15/03	F3	U+00DB	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
11/04	B4	U+0160	LATIN CAPITAL LETTER S WITH CARON	15/04	F4	U+00D9	LATIN CAPITAL LETTER U WITH GRAVE
11/05	B5	U+0166	LATIN CAPITAL LETTER T WITH STROKE	15/05	F5	U+0131	LATIN SMALL LETTER DOTLESS I
11/06	B6	U+2202	PARTIAL DIFFERENTIAL	15/06	F6	U+01B7	LATIN CAPITAL LETTER EZH
11/07	B7	U+017D	LATIN CAPITAL LETTER Z WITH CARON	15/07	F7	U+0292	LATIN SMALL LETTER EZH
11/08	B8	U+010D	LATIN SMALL LETTER C WITH CARON	15/08	F8	U+01EE	LATIN CAPITAL LETTER EZH WITH CARON
11/09	B9	U+0111	LATIN SMALL LETTER D WITH STROKE	15/09	F9	U+01EF	LATIN SMALL LETTER EZH WITH CARON
11/10	BA	U+014B	LATIN SMALL LETTER ENG	15/10	FA	U+01E4	LATIN CAPITAL LETTER G WITH STROKE
11/11	BB	U+0161	LATIN SMALL LETTER S WITH CARON	15/11	FB	U+01E5	LATIN SMALL LETTER G WITH STROKE
11/12	BC	U+0167	LATIN SMALL LETTER T WITH STROKE	15/12	FC	U+01E6	LATIN CAPITAL LETTER G WITH CARON
11/13	BD	U+017E	LATIN SMALL LETTER Z WITH CARON	15/13	FD	U+01E7	LATIN SMALL LETTER G WITH CARON
11/14	BE	U+00E6	LATIN SMALL LETTER AE	15/14	FE	U+01E8	LATIN CAPITAL LETTER K WITH CARON
11/15	BF	U+00F8	LATIN SMALL LETTER O WITH STROKE	15/15	FF	U+01E9	LATIN SMALL LETTER K WITH CARON

The "left half" of the Sami Macintosh coding table – i.e. bit combinations 02/00–07/14 – is identical to character set ISO-IR 6 (table D.1).

Annex F

Layout specification for Sami-language keyboards

In the table below designations according to ISO/IEC 9995-1:1994 are used for key identification (ID). The corresponding character identities are given according to ISO/IEC 10646-1:2000.

"Group 1" applies to the normal function of the keyboard. "Alternative" applies to the layout that can be activated by a group select key (see ISO/IEC 9995-1).

Note: How the alternative layout is activated will be system-dependent, and is not specified. It is however assumed that for Microsoft-type keyboards this is done by the **AltGr** key, and for Macintosh keyboards by the **Option** key.

Shading indicates letters required only on the extended-alphabet implementation level. Note that some of the letters could optionally be made available by a diacritic-letter key sequence; see clause 3.4.2.

Table F.1 – Common character allocations

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
D01	LATIN SMALL LETTER A WITH ACUTE ACCENT (U+00E1)	LATIN CAPITAL LETTER A WITH ACUTE ACCENT (U+00C1)	LATIN SMALL LETTER Q (U+0071)	LATIN CAPITAL LETTER Q (U+0051)
D02	LATIN SMALL LETTER S WITH CARON (U+0161)	LATIN CAPITAL LETTER S WITH CARON (U+0160)	LATIN SMALL LETTER W (U+0077)	LATIN CAPITAL LETTER W (U+0057)
D03	LATIN SMALL LETTER E (U+0065)	LATIN CAPITAL LETTER E (U+0045)		
D04	LATIN SMALL LETTER R (U+0072)	LATIN CAPITAL LETTER R (U+0052)		
D05	LATIN SMALL LETTER T (U+0074)	LATIN CAPITAL LETTER T (U+0054)		
D06	LATIN SMALL LETTER T WITH STROKE (U+0167)	LATIN CAPITAL LETTER T WITH STROKE (U+0166)	LATIN SMALL LETTER Y (U+0079)	LATIN CAPITAL LETTER Y (U+0059)
D07	LATIN SMALL LETTER U (U+0075)	LATIN CAPITAL LETTER U (U+0055)		
D08	LATIN SMALL LETTER I (U+0069)	LATIN CAPITAL LETTER I (U+0049)	LATIN SMALL LETTER I WITH DIAERESIS (U+00EF)	LATIN CAPITAL LETTER I WITH DIAERESIS (U+00CF)
D09	LATIN SMALL LETTER O (U+006F)	LATIN CAPITAL LETTER O (U+004F)	LATIN SMALL LETTER O WITH TILDE (U+00F5)	LATIN CAPITAL LETTER O WITH TILDE (U+00D5)
D10	LATIN SMALL LETTER P (U+0070)	LATIN CAPITAL LETTER P (U+0050)		
D11	LATIN SMALL LETTER A WITH RING ABOVE (U+00E5)	LATIN CAPITAL LETTER A WITH RING ABOVE (U+00C5)		
D12	LATIN SMALL LETTER ENG (U+014B)	LATIN CAPITAL LETTER ENG (U+014A)		
C01	LATIN SMALL LETTER A (U+0061)	LATIN CAPITAL LETTER A (U+0041)	LATIN SMALL LETTER A WITH CIRCUMFLEX (U+00E2)	LATIN CAPITAL LETTER A WITH CIRCUMFLEX (U+00C2)
C02	LATIN SMALL LETTER S (U+0073)	LATIN CAPITAL LETTER S (U+0053)		
C03	LATIN SMALL LETTER D (U+0064)	LATIN CAPITAL LETTER D (U+0044)		
C04	LATIN SMALL LETTER F (U+0066)	LATIN CAPITAL LETTER F (U+0046)		
C05	LATIN SMALL LETTER G (U+0067)	LATIN CAPITAL LETTER G (U+0047)	LATIN SMALL LETTER G WITH CARON (U+01E7))	LATIN CAPITAL LETTER G WITH CARON (U+01E6)
C06	LATIN SMALL LETTER H (U+0068)	LATIN CAPITAL LETTER H (U+0048)	LATIN SMALL LETTER G WITH STROKE (U+01E5)	LATIN CAPITAL LETTER G WITH STROKE (U+01E4)
C07	LATIN SMALL LETTER J (U+006A)	LATIN CAPITAL LETTER J (U+004A)		
C08	LATIN SMALL LETTER K (U+006B)	LATIN CAPITAL LETTER K (U+004B)	LATIN SMALL LETTER K WITH CARON (U+01E9)	LATIN CAPITAL LETTER K WITH CARON (U+01E8)
C09	LATIN SMALL LETTER L (U+006C)	LATIN CAPITAL LETTER L (U+004C)		

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10				
C11	See tables F.2 and F.3 below			
C12	LATIN SMALL LETTER D WITH STROKE (U+0111)	LATIN CAPITAL LETTER D WITH STROKE (U+0110)		
B00	LATIN SMALL LETTER Z WITH CARON (U+017E)	LATIN CAPITAL LETTER Z WITH CARON (U+017D)	LATIN SMALL LETTER EZH WITH CARON (U+01EF)	LATIN CAPITAL LETTER EZH WITH CARON (U+01EE)
B01	LATIN SMALL LETTER Z (U+007A)	LATIN CAPITAL LETTER Z (U+005A)	LATIN SMALL LETTER EZH (U+0292)	LATIN CAPITAL LETTER EZH (U+01B7)
B02	LATIN SMALL LETTER C WITH CARON (U+010D)	LATIN CAPITAL LETTER C WITH CARON (U+010C)	LATIN SMALL LETTER X (U+0078)	LATIN CAPITAL LETTER X (U+0058)
B03	LATIN SMALL LETTER C (U+0063)	LATIN CAPITAL LETTER C (U+0043)		
B04	LATIN SMALL LETTER V (U+0076)	LATIN CAPITAL LETTER V (U+0056)		
B05	LATIN SMALL LETTER B (U+0062)	LATIN CAPITAL LETTER B (U+0042)		
B06	LATIN SMALL LETTER N (U+006E)	LATIN CAPITAL LETTER N (U+004E)		
B07	LATIN SMALL LETTER M (U+006D)	LATIN CAPITAL LETTER M (U+004D)		

Table F.2 – Sami-language keyboard character allocations for Norway

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10	LATIN SMALL LETTER O WITH STROKE (U+00F8)	LATIN CAPITAL LETTER O WITH STROKE (U+00D8)	LATIN SMALL LETTER O WITH DIAERESIS (U+00F6)	LATIN CAPITAL LETTER O WITH DIAERESIS (U+00D6)
C11	LATIN SMALL LETTER AE (U+00E6)	LATIN CAPITAL LETTER AE (U+00C6)	LATIN SMALL LETTER A WITH DIAERESIS (U+00E4)	LATIN CAPITAL LETTER A WITH DIAERESIS (U+00C4)

Table F.3 – Sami-language keyboard character allocations for Finland/Sweden

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10	LATIN SMALL LETTER O WITH DIAERESIS (U+00F6)	LATIN CAPITAL LETTER O WITH DIAERESIS (U+00D6)	LATIN SMALL LETTER O WITH STROKE (U+00F8)	LATIN CAPITAL LETTER O WITH STROKE (U+00D8)
C11	LATIN SMALL LETTER A WITH DIAERESIS (U+00E4)	LATIN CAPITAL LETTER A WITH DIAERESIS (U+00C4)	LATIN SMALL LETTER AE (U+00E6)	LATIN CAPITAL LETTER AE (U+00C6)

Annex G

Layout specification for majority-language keyboards with Sami letters

In the table below designations according to ISO/IEC 9995-1:1994 are used for key identification (ID). The corresponding character identities are given according to ISO/IEC 10646-1:2000.

"Group 1" applies to the normal function of the keyboard. "Alternative" applies to the layout that can be activated by a group select key (see ISO/IEC 9995-1).

Note: How the alternative layout is activated will be system-dependent, and is not specified. It is however assumed that for Microsoft-type keyboards this is done by the **AltGr** key, and for Macintosh keyboards by the **Option** key.

Shading indicates letters required only on the extended-alphabet implementation level. Note that some of the letters could optionally be made available by a diacritic-letter key sequence; see clause 3.4.2.

Table G.1 – Common character allocations

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
D01	LATIN SMALL LETTER Q (U+0071)	LATIN CAPITAL LETTER Q (U+0051)	LATIN SMALL LETTER A WITH CIRCUMFLEX (U+00E2)	LATIN CAPITAL LETTER A WITH CIRCUMFLEX (U+00C2)
D02	LATIN SMALL LETTER W (U+0077)	LATIN CAPITAL LETTER W (U+0057)		
D03	LATIN SMALL LETTER E (U+0065)	LATIN CAPITAL LETTER E (U+0045)		
D04	LATIN SMALL LETTER R (U+0072)	LATIN CAPITAL LETTER R (U+0052)		
D05	LATIN SMALL LETTER T (U+0074)	LATIN CAPITAL LETTER T (U+0054)	LATIN SMALL LETTER T WITH STROKE (U+0167)	LATIN CAPITAL LETTER T WITH STROKE (U+0166)
D06	LATIN SMALL LETTER Y (U+0079)	LATIN CAPITAL LETTER Y (U+0059)		
D07	LATIN SMALL LETTER U (U+0075)	LATIN CAPITAL LETTER U (U+0055)		
D08	LATIN SMALL LETTER I (U+0069)	LATIN CAPITAL LETTER I (U+0049)	LATIN SMALL LETTER I WITH DIAERESIS (U+00EF)	LATIN CAPITAL LETTER I WITH DIAERESIS (U+00CF)
D09	LATIN SMALL LETTER O (U+006F)	LATIN CAPITAL LETTER O (U+004F)	LATIN SMALL LETTER O WITH TILDE (U+00F5)	LATIN CAPITAL LETTER O WITH TILDE (U+00D5)
D10	LATIN SMALL LETTER P (U+0070)	LATIN CAPITAL LETTER P (U+0050)		
D11	LATIN SMALL LETTER A WITH RING ABOVE (U+00E5)	LATIN CAPITAL LETTER A WITH RING ABOVE (U+00C5)		
C01	LATIN SMALL LETTER A (U+0061)	LATIN CAPITAL LETTER A (U+0041)	LATIN SMALL LETTER A WITH ACUTE ACCENT (U+00E1)	LATIN CAPITAL LETTER A WITH ACUTE ACCENT (U+00C1)
C02	LATIN SMALL LETTER S (U+0073)	LATIN CAPITAL LETTER S (U+0053)	LATIN SMALL LETTER S WITH CARON (U+0161)	LATIN CAPITAL LETTER S WITH CARON (U+0160)
C03	LATIN SMALL LETTER D (U+0064)	LATIN CAPITAL LETTER D (U+0044)	LATIN SMALL LETTER D WITH STROKE (U+0111)	LATIN CAPITAL LETTER D WITH STROKE (U+0110)
C04	LATIN SMALL LETTER F (U+0066)	LATIN CAPITAL LETTER F (U+0046)	LATIN SMALL LETTER G WITH STROKE (U+01E5)	LATIN CAPITAL LETTER G WITH STROKE (U+01E4)
C05	LATIN SMALL LETTER G (U+0067)	LATIN CAPITAL LETTER G (U+0047)	LATIN SMALL LETTER G WITH CARON (U+01E7)	LATIN CAPITAL LETTER G WITH CARON (U+01E6)
C06	LATIN SMALL LETTER H (U+0068)	LATIN CAPITAL LETTER H (U+0048)		
C07	LATIN SMALL LETTER J (U+006A)	LATIN CAPITAL LETTER J (U+004A)		
C08	LATIN SMALL LETTER K (U+006B)	LATIN CAPITAL LETTER K (U+004B)	LATIN SMALL LETTER K WITH CARON (U+01E9)	LATIN CAPITAL LETTER K WITH CARON (U+01E8)
C09	LATIN SMALL LETTER L (U+006C)	LATIN CAPITAL LETTER L (U+004C)		

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10	See tables G.2 and G.3 below			
C11				
B01	LATIN SMALL LETTER Z (U+007A)	LATIN CAPITAL LETTER Z (U+005A)	LATIN SMALL LETTER Z WITH CARON (U+017E)	LATIN CAPITAL LETTER Z WITH CARON (U+017D)
B02	LATIN SMALL LETTER X (U+0078)	LATIN CAPITAL LETTER X (U+0058)		
B03	LATIN SMALL LETTER C (U+0063)	LATIN CAPITAL LETTER C (U+0043)	LATIN SMALL LETTER C WITH CARON (U+010D)	LATIN CAPITAL LETTER C WITH CARON (U+010C)
B04	LATIN SMALL LETTER V (U+0076)	LATIN CAPITAL LETTER V (U+0056)	LATIN SMALL LETTER EZH WITH CARON (U+01EF)	LATIN CAPITAL LETTER EZH WITH CARON (U+01EE)
B05	LATIN SMALL LETTER B (U+0062)	LATIN CAPITAL LETTER B (U+0042)	LATIN SMALL LETTER EZH (U+0292)	LATIN CAPITAL LETTER EZH (U+01B7)
B06	LATIN SMALL LETTER N (U+006E)	LATIN CAPITAL LETTER N (U+004E)	LATIN SMALL LETTER ENG (U+014B)	LATIN CAPITAL LETTER ENG (U+014A)
B07	LATIN SMALL LETTER M (U+006D)	LATIN CAPITAL LETTER M (U+004D)		

Table G.2 – Norwegian-keyboard character allocations

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10	LATIN SMALL LETTER O WITH STROKE (U+00F8)	LATIN CAPITAL LETTER O WITH STROKE (U+00D8)	LATIN SMALL LETTER O WITH DIAERESIS (U+00F6)	LATIN CAPITAL LETTER O WITH DIAERESIS (U+00D6)
C11	LATIN SMALL LETTER AE (U+00E6)	LATIN CAPITAL LETTER AE (U+00C6)	LATIN SMALL LETTER A WITH DIAERESIS (U+00E4)	LATIN CAPITAL LETTER A WITH DIAERESIS (U+00C4)

Table G.3 – Finnish/Swedish-keyboard character allocations

ID	GROUP 1 - LOWER SHIFT	GROUP 1 - UPPER SHIFT	ALTERNATIVE - LOWER SHIFT	ALTERNATIVE - UPPER SHIFT
C10	LATIN SMALL LETTER O WITH DIAERESIS (U+00F6)	LATIN CAPITAL LETTER O WITH DIAERESIS (U+00D6)	LATIN SMALL LETTER O WITH STROKE (U+00F8)	LATIN CAPITAL LETTER O WITH STROKE (U+00D8)
C11	LATIN SMALL LETTER A WITH DIAERESIS (U+00E4)	LATIN CAPITAL LETTER A WITH DIAERESIS (U+00C4)	LATIN SMALL LETTER AE (U+00E6)	LATIN CAPITAL LETTER AE (U+00C6)

Annex H

Illustrations of keyboard layouts

Sami-language keyboards
Shaded keys for orientation purpose only; see note below

Figure H.1 – Sami keyboard for Norway: basic level layout

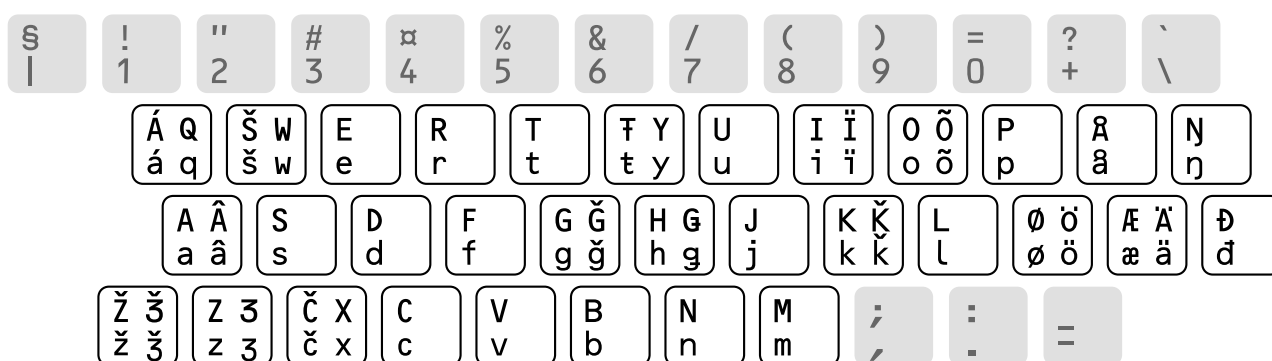Finnish/Swedish layout identical, except øØ interchanged with öÖ and æÆ with äÄ

Figure H.2 – Sami keyboard for Norway: extended-alphabet level layout

Finnish/Swedish layout identical, except øØ interchanged with öÖ and æÆ with äÄ

NOTE   Shaded keys represent character positioning typical for commercially-available keyboards in Norway; minor differences exist for keyboards available in Finland and/or Sweden. These keys are outside the scope of this document.

Majority-language keyboards with Sami letters

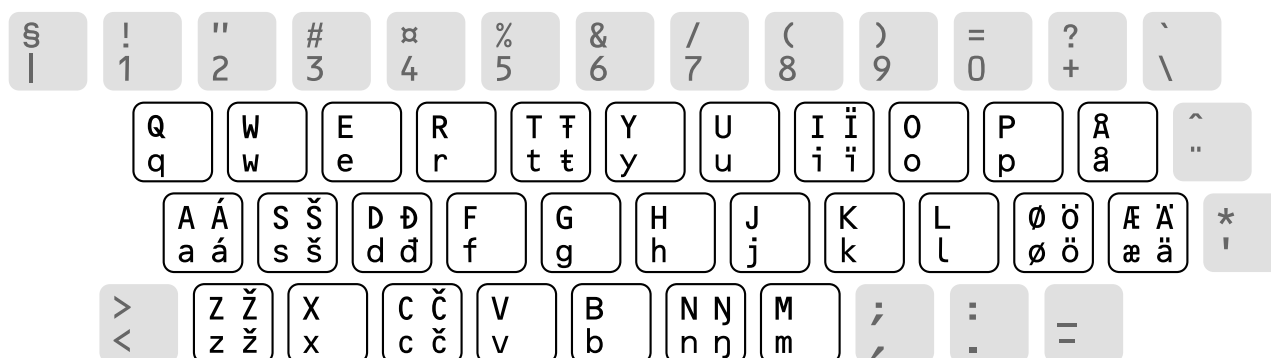Shaded keys for orientation purpose only; see note below

Figure H.3 – Norwegian keyboard with Sami letters: basic level layout

Finnish/Swedish layout identical, except øØ interchanged with öÖ and æÆ with äÄ
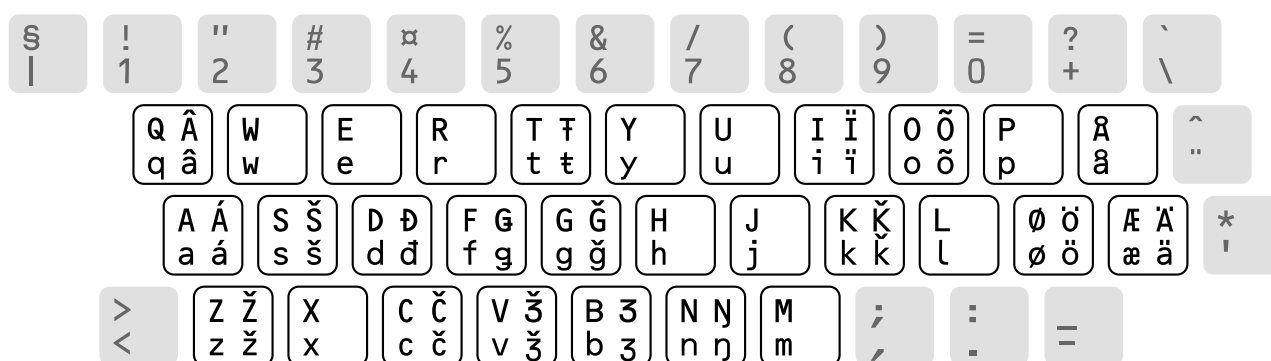
Figure H.4 – Norwegian keyboard with Sami letters: extended-alphabet level layout

Finnish/Swedish layout identical, except øØ interchanged with öÖ and æÆ with äÄ

NOTE   Shaded keys represent character positioning typical for commercially-available keyboards in Norway; minor differences exist for keyboards available in Finland and/or Sweden. These keys are outside the scope of this document.

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