


## Keyboard Standard


Indian Language Keyboard is categorized into three parts namely, Inscript, Phonetic and Typewriter keyboards. The Indian language alphabet table is divided into Vowels (Swar) and Consonants (Vyanjan). **The INSCRIPT (Indian Script) keyboard** was standardized by Department of Electronics (DOE) in 1986 with a subsequent revision in 1988. The INSCRIPT keyboard layout was declared as National Standard by Bureau of Indian Standard (BIS) in 1991. The BIS ISCI document (IS 13194:1991) also describes the keyboard layout for each script.

### Need of Enhanced Inscript keyboard layout

With the advent of Unicode new characters were added to each code-page; characters for which the BIS document had not made any provision. In addition Unicode introduced the concept of ZWJ and ZWNJ as well as that of normalization. These new features had marked repercussion on storage as well as inputting and an urgent need was felt for a revision whereby each and new character introduced in Unicode would be accommodated on the keyboard and a uniform manner of entering data as well as storing data would be devised.

With this urgent requirement, TDIL along with the involvement of all major players, a joint meeting was organized in 2008, to devise a common and uniform strategy for inputting and equally important for storage. This would enable the creation of one single keyboard and more importantly one single storage, essential for all high-end NLP.

Govt. of India has recently approved the New Rupee Symbol  and there is now urgent need for its representation in the INSCRIPT Keyboard layout and the Qwerty Keyboard. For this purpose, the meeting was held on 13<sup>th</sup> August, 2010 at DIT, New Delhi to deliberate all the pending issues for finalization of the INSCRIPT and Qwerty Keyboard layout compatible with latest UNICODE version and inclusion of new Rupee Symbol, so that the matter can be taken up with BIS for declaration as National Standard.

TDIL, DIT submitted new rupee symbol  to Unicode Consortium on 5 August, 2010. Unicode Consortium has voted to accept new Indian rupee symbol character on 11 August, 2010 and the code assigned is U + 20B9 in the currency symbol page.

In the meeting, three proposals were deliberated:

- C-DAC (INSCRIPT keyboard for 22 Constitutionally recognized languages)
- Wipro (For QWERTY & Dot Matrix)
- TVS-E (For QWERTY , DOT Matrix & other types of printers)

## REVIEW OF KEY BOARD LAYOUTS:

### Goals:

1. To percolate the use of New Rupee Sign globally
2. To maintain correspondence of Key Positions in Qwerty and INSCRIPT Keyboard layouts
3. Minimum Impact on the existing implementations
4. To give user-friendly solutions.

### Criteria :

- Design
  - Standards compliant
  - Ergonomicity
  - Top-of-the-mind recall
  - Ease of use
- Implementation
  - Speed
  - Cost
  - Reliability

### Key issues

1. Cost
2. Availability of key combination
3. Selecting the Key Combination

Options	Keyboard Layout	User base	Risk of implementing Changes				Pros	Cons
			Win	Linux	MAC	Applications		
AltGr + r  [Has same position in all keyboard layouts]	en-US	80%	High	High		May conflict on Short-cuts	1. Intuitive for users 2. Key comb. is available [Follows ISO]	1. Acceptability by OS vendors 2. May not be implementable on Mobile 3. Confusion between two 'ALT' keys
	en-IN	20%	Minimal	Minimal			1. Complete control on Standard for use in Indic 2. Easy adoption	
	en-US International						1. Available for global use	Conflicts with registered trademark

	Enhanced INSCRIPT including QWERTY  (compliant with UNICODE 5.2)	Low  (India only)	Low	Low		No	1. Can be adopted as en-IN providing English along with other Indian languages 2. Easy to mandate	1. Changes will be required to accommodate New Rupee Sign in the first layer.
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Options	Keyboard Layout	User base	Risk of implementing Changes				Pros	Cons
			Win	Linux	MAC	Applications		
AltGr + \	en-US	80%	High	High			<ul style="list-style-type: none"> <li>1. Correspondence maintained with INSCRIPT</li> <li>2. Less likely to conflict with short-cuts.</li> <li>3. Key comb. is available</li> <li>4. Follows ISO</li> </ul>	<ul style="list-style-type: none"> <li>1. OEM Key</li> <li>2. Not Intuitive to users</li> <li>3. Location inconsistent .</li> <li>4. Acceptability by OS vendors</li> <li>5. May not be implementable on Mobile</li> <li>6. Confusion between two 'ALT' keys</li> </ul>
	en-IN	20%	Minimal	Minimal			<ul style="list-style-type: none"> <li>1. Complete control on Standard for use in Indic</li> <li>2. Easy adoption</li> </ul>	
	en-US International						<ul style="list-style-type: none"> <li>1. Available for global use</li> </ul>	
	Enhanced INSCRIPT including	Low  (India	Low	Low	Low		No	<ul style="list-style-type: none"> <li>1. Can be adopted as en-IN providing English</li> </ul>

	QWERTY (compliant with UNICODE 5.2)	only)					along with other Indian languages  2. Easy to mandate	New Rupee Sign in the first layer.
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	Enhanced INSCRIPT including QWERTY (compliant with	Low (India only)	Low	Low		No	1. Can be adopted as en-IN providing English along with other Indian languages	1. Changes will be required to accommodate New Rupee Sign in the first layer.

	UNICODE 5.2)						2. Easy to mandate	
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**Challenges :**

- Modifying the en-US Locale
- Current user base of en-US & their adaptation
- Difference can start now for en-US & en-IN by providing Indian specific requirements
- Update from Microsoft as patch on regular basis
- Update from Red-hat /LINUX community

**It has been decided that, all keyboard manufacturers / OS Developers not to market /promote any non-standard solutions till the final decision is taken.**

**The next meeting is scheduled on 31st August, 2010 at DIT, New Delhi. Your participation is crucial for the meeting.**

**Please fill the feedback above form and mail it to the following E-mail address [schandra@mit.gov.in](mailto:schandra@mit.gov.in)**