



Section IV - Tools

3.24 Limited Domain Speech Synthesis System for Tourists

- **Technology Developer**
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Language Technologies Research Centre
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Prof. Rajeev Sangal, Director
sangal@iiit.net
- **Level: Product/ Subsystem**
Prototype Product
- **Description**
A user with a hand-held device will be able to select what he wants to say in English (using a stylus and menus), and the device will speak it out in Hindi or Telugu.
- **Encoding Standards**
ISCII / Unicode
- **Portability/ Expandability**
Prototype will be based on linux on a hand held device like simputer.
- **Type of Technology**
Human Machine Interface
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not applied yet.
Testing
Under going.
- **Potential Beneficiaries**
Tourists who do not know the local language will be able to communicate with the local people through this device.
- **User Tie-ups**
None

4.1 ITERM- Indian Script Terminal for Unix X-windows

- **Technology Developer**
Indian Institute of Technology
Department of Computer Science & Engineering
Kanpur-208 016
Tel: 0512-597652
Fax:590725
Prof. Rajat Moona
moona@iitk.ac.in
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Using this software it is possible to execute any text based utilities in Unix environment and use the Indian language support. It is possible to name the files and see the directory listing in Hindi. The Hindi files can be edited using terminal based standard Unix utilities such as vi, sed, etc. The configuration files supplied with the ITERM are written to support ISCII files, Inscript Key board layout and Devanagari TeX fonts.
- **Encoding Standards**
Characters can be coded using ISCII or any other standard. It is possible to support the ISFOC fonts or any other fonts. It supports inscript/ phonetic keyboard layout.
- **Portability/ Expandability**
Few configuration files can be written so that it can be used with wide variety of scripts other than Devanagari.
- **Type of Technology**
Tools
- **Readiness for ToT**
Technology is open and is available in the source form under GNU license
Documentation
Installation guidelines and User's Guide to use and configure the system are being prepared.
IPRs
Not yet applied.
Testing
The system is tested on Linux and Solaris Operating System with X11R6.
- **Potential Beneficiaries**
Users of Unix platform.
- **User Tie-ups**
None



Section IV - Tools

4.2 Lekhan Patra - Bilingual Word Processor for LINUX

- **Technology Developer**
Electronics Research & Development Centre
C-56/1, Anusandhan Bhawan,
Sector-62,
Noida – 201301
Tel. 91-4587717-25 Fax: 91-4587726
Shri V.N.Shukla, Director (Special Applications)
shuklavn@hotmail.com
- **Level : Product/ Subsystem**
Software Product
- **Description**
A multilingual communication tool to support Business/Academic activities. Lekhika has special features like Able to create and open multi lingal document, Able to edit and save them preserving their Font, Style and Language etc, Able to import and export various file formats and encoding, Can run concurrently multiple instance of itself, Native system's look and feel, Multilingual Help, Customizable, Scalable, Embedded utilities like calculator, Dictionaries, Spell Checker in local languages & calendar.
- **Encoding Standards**
It supports both ISCII & UNICODE storage code.
- **Portability/ Expandability**
Package can be integrated with any platform as utility. Expandable to multilingual word processor.
- **Type of Technology**
Tool
- **Readiness for ToT Documentation**
Installation guidelines and User's Guide, to use and configure the system, are being prepared.
- IPRs**
It is being applied for.
- Testing**
Beta testing in progress.
- **Potential beneficiaries**
Various organizations working in Hindi having LINUX / UNIX / Windows Platform.
- **User Tie-ups**
CTB, New Delhi

4.3 Linux ISFOC Script Manager (LISM)

- **Technology Developer**
Centre for Development of Advanced Computing, GIST Group
Pune University Campus, Ganesh Khind Road
Pune-411007
Tel. : 91-20-5694000
Fax : 91-20-5651111
Shri M.D. Kulkarni
mdk@cdac.ernet.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
 - Allows word processing on Linux systems- The user can create documents and text files in Indian Languages using Linux based word processor and text editors.
 - Works in multiple documents simultaneously.
 - Supports ten Indian scripts- Assamese, Bengali, Devnagari, Gujarati, Kannada, Malayalam, Oriya, Punjabi, Tamil and Telugu.
 - Bilingual support- The user can create documents using two scripts simultaneously i.e. English script and any one of the Indian scripts.
 - Keyboard Layout- Presently LISM supports Inscript Keyboard layout.
- **Encoding Standards**
8-bit Indian Standard Code For Information Interchange (ISCII). Indian Script Font Code (ISFOC).
- **Portability/Expandability**
Portable
- **Type of Technology**
Tools
- **Readiness of TOT Documentation**
Complete
IPRs
C-DAC Pune.
Testing
Done
- **Potential beneficiaries**
Government & Industries
- **User Tie-ups**
None



Tools

4.4 Indica Multilingual Solution (SDK)

- **Technology Developer**
Summit Information Technologies Pvt. Ltd
816, Phase V, Udyog Vihar,
Gurgaon-122016
Tel. : 916-347380-84
Shri Sunil Khullar
sunilkhullar@indya.com
- **Level: Product/ Subsystem**
Product/SDK
- **Description**
Indian Script Unicode for Windows 95/98/NT and above: First Indian language solution to support Unicode. Data processing solution in Indian languages Supports Oracle 8i/9i and MS SQL 2000 server and MS-Access. Supports development platforms like D2K, VB, ASP, JSP, Java, HTML etc. Supports UNIX, Linux and NT/2000 servers. Delivered as an SDK (software development kit). Consists of java classes, libraries and DLLs. Stores data in Unicode. Works even for Windows 95/98 and NT. This technology can be used both in Client Server and Web environment
- **Encoding Standards**
UNICODE & ISCII
- **Portability/ Expandability**
Supports Windows and Macintosh as front end. Server could be Unix, Linux, NT/2000, RISC or CISC.
- **Type of Technology**
Tools
- **Readiness for ToT**
Documentation
Available
Testing
A number of prototypes have been developed as proof of concept. Product is thoroughly tested.
- **Potential beneficiaries**
Software development companies developing eGovernance applications for various Govt depts. State governments who would like to buy enterprise license which will meet all their text and data processing requirements.
- **User Tie-ups**
With Govt of Gujarat (rate contract), GNFC and TCIL.

4.5 Bilingual Punjabi-English Word Processor with Spell Checker

- **Technology Developer**
Thapar Institute of Engineering & Technology
Department of Computer Science & Engineering (Deemed University), Patiala 147 001
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Fax: 0175-214498, 216391, 212012, 212002
Shri G.S. Lehal (Asst. Prof.)
Tel:393374(D),283502(R)
gslehal@mailcity.com
- **Level : Product/ Subsystem**
Software Product
- **Description**
It is a bilingual Punjabi-English word processor with spell checker support. It also supports both phonetic and typewriter keyboard layout for Punjabi and it has a spell checker which can operate on all documents typed in both Punjabi and English.
- **Encoding Standards**
The system encodes the output in ASCII encoding format.
- **Portability/ Expandability**
The technology can be used with any windows platform.
- **Type of Technology**
Tools
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not yet applied
Testing
Self testing going on.
- **Potential beneficiaries**
Government sector, Typist, Educationist.
- **User Tie-ups**
None



Tools

4.6 Word Processor for Tamil

- **Technology Developer**
Anna University
School of Computer Science & Engineering
Chennai - 600 025
Tel. 044-2351723 Fax: 044-2350397
Dr. T.V.Geetha/Ms. Ranjani Parthasarathi
rp@annauniv.edu
- **Level: Product/ Subsystem**
Software Product
- **Description**
Suvadi is a word processor designed specifically for Tamil language. The menus and dialogues of this word processor are in Tamil. It also supports English. The initial version supports common facilities such as undo, redo, without limit, numbering, bullets, tables etc.
- **Encoding Standards**
It uses TAM/TAB font set encoding, can be made to support ISCII and UNICODE.
- **Portability/ Expandability**
Suvadi is developed in a platform independent language using Java so it is highly portable and works with any platform. Since it is using Object Oriented concepts it can be expanded as per requirement. It can be integrated with modules such as Spell Checker, Grammar Checker, Text to Speech, etc.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not yet applied.
Testing
Testing in progress.
- **Potential beneficiaries**
Tamil language users
- **User Tie-ups**
None

4.7 Office Suit for Tamil

- **Technology Developer**
Anna University
School of Computer Science & Engineering
Chennai - 600 025
Tel. 044-2351723 Fax: 044-2350397
Dr. T.V.Geetha/Ms. Ranjani Parthasarathi
rp@annauniv.edu
- **Level: Product/ Subsystem**
Software Product
- **Description**
Office Suite in Tamil is a Package with a Word Processor, a Database Front end, a Presentation Tool and a Spread Sheet Tool for Tamil Text / Data processing. Functionality of this technology is similar to MS-Acess, Navigation is made simple.
- **Encoding Standards**
The data is stored in .mdb format as in MS Access. Awt components first convert the Unicode characters to the host's native character, the TAB font set encoding. If the target character set does not have the needed Unicode character, a substitute character is often used to represent the original character.
- **Portability/ Expandability**
As the development work is in Java, all the code developed is portable. It consists of collection of modules hence supports portability. Since interface for this program is categorized through , new modules can be added very easily.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not yet applied.
Testing
Primary testing completed. Testing has been carried in two ways,i.e., Module testing and Integrated testing. Extensive testing needs to be done.
- **Potential beneficiaries**
Any user who needs/ or is comfortable with a user interface in Tamil.
- **User Tie-ups**
None



Tools

4.8 Bangla Spell Checker

- **Technology Developer**
Indian Statistical Institute
Computer Vision and Pattern Recognition Unit
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Prof. B.B. Chaudhary, Head
bbc@isical.ac.in
- **Level : Product/ Subsystem**
Software Subsystem
- **Description**
This Utility programme works with the help of Bangla Editor. Spell checker can act as offline or on line. Whenever user types Bangla, spell checks wrong spelling and gives suitable suggestions. On the other hand one can run this software on previously typed material. It has facility to add new words in the dictionary against which spellings are checked. One can delete words from this dictionary too.
- **Encoding Standards**
The storage code is ISCII.
- **Portability/ Expandability**
The system is developed in Microsoft Visual C++ and hence, it runs on Windows/95/98/2000 or Windows NT.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide to use and configure the system is ready.
IPRs
Not yet applied.
Testing
The results of the Alpha testing says : All misspelt words are captured. For a single-error word, intended word is found within top four suggested words in the suggestion list. This is true for all single error words. Words having more than one error are also captured and for most of them intended words are in the upper half of the suggestion list.
- **Potential beneficiaries**
Bangla Newspaper Houses, Publishing Houses, Libraries, Offices looking for Office Automation, Linguistic Community, Writers, Poets, Blind people, etc.
- **User Tie-ups**
None

4.9 ANUSAARAKA- A Language Accessor among Indian Languages to Hindi

- **Technology Developer**
University of Hyderabad
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University of Hyderabad, P.O. Central University
Hyderabad-500 046
Tel: 040-3010500(O),3010846(R)
Fax: 040-3010145/3010120
Dr. G. Uma Maheshwar Rao
guraosh@uohyd.ernet.in
- **Level: Product/ Subsystem**
Subsystem
- **Description**
Anusaaraka is a computer software which renders text from one Indian language into another. It produces output which is comprehensible to the reader, although at times it might not be grammatical. For example, a Telugu to Hindi anusaaraka can take a Telugu text and produce output in Hindi which can be understood by a Hindi reader, but which is not fully grammatical. Therefore, the reader will require some amount of training for reading the output. Anusaarakas have been built from Telugu, Kannada, Bengali, Marathi, and Punjabi to Hindi. Beta versions of all of these have been released for use over the internet as e-mail servers.
- **Encoding Standards**
The storage code is ISCII.
- **Portability/ Expandability**
It is open source code under GPL therefore users can easily adopt it for their use.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not yet applied.
Testing
Done
- **Potential Beneficiaries**
Anusaaraka can be used in various scenarios. For example, A reader might be accessing a web site containing Indian language texts. He comes across a site of interest, and wants to read material on it. However, he does not know the language. He can run anusaaraka and read the text. Normally, the reader motivation is high and he is willing to put in some effort.
- **User Tie-ups**
None



Tools

4.10 Multilingual Text Editor

- **Technology Developer**
University of Hyderabad
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3010374(R)
Fax: 040-3010120, 3010145
Prof. K. Narayan Murthy (CI)
knmcs@uohyd.ernet.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
This is a Platform Independent Robust Editor for Indian Languages. It works under Microsoft Windows as also under Linux. Supports INSCRIPT, Roman as also On-Screen keyboards. It can effectively deal with large files, long lines, etc. Syllable based design - ideal for Indian languages. Supports all major Indian languages and English-swift transliteration between various scripts-allows documents in any language to be read in a script that one knows.
- **Encoding Standards:**
It supports ISCII as well as Unicode.
- **Portability/ Expandability**
It will be integrated with our dictionaries, thesaurus, morphological analyzers and generators, spell checkers, OCR system, Website development tools and our Web Based Education System. It will become a comprehensive platform for a variety of work in Indian Languages. The code is developed in Java and is fully portable - works under MS Windows as well as Linux. It can be easily ported to other Operating Systems as well. The current version is a simple text editor and a number of enhancements are being carried out to improve the functionality.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are being prepared
- IPRs**
Not yet applied
- Testing**
Alpha Testing: Being used in our labs. on a daily basis - regular improvements and enhancements being done.
- **Potential beneficiaries**
Anybody who works with Indian languages, i.e., Students, Teachers, Writers, Publishers, Government Offices, etc.
- **User Tie-ups**
Computer Literacy Centre, Hyderabad.

4.11 VARTALAAP : A multilingual Communication Tool

- **Technology Developer**
National Centre for Software Technology
Gulmohar Cross Road No. 9, Juhu,
Bombay - 400 049
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022-7579935/7812120(D)
Fax: 022-6232195/6210139
Shri Durgesh Rao
durgesh@ncst.ernet.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
A multilingual communication tool designed to support Business activities including meetings and conferences and Academic activities like virtual class rooms. Ideally suited to host discussion forums with a high level of interactivity. The technology uses a unique concept of Object Oriented User Interface where every co-user is represented by his/her own window space. This has the facility to send isolated files as well as files attached with discussion messages. It is capable of handling one-to-one, one-to-many communication in five Indian languages.
- **Portability/ Expandability**
This technology is based on Windows 2000/NT and above. The technology has Generic and Plug-In architecture to allow extensions, also Linux portability is being added. This technology has the potential to work with Knowledge Management Systems.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are ready.
- IPRs**
Not applicable (being developed under public domain GPL Model.)
- Testing**
Being tested by diploma students at Bangalore.
- **Potential Beneficiaries**
Educational Institutions involved in long distance and online training. Small scale organizations requiring decentralized communication.
- **User Tie-ups**
None



Tools

4.12 Bilingual Address Management System

- **Technology Developer**
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Sector-62,
Noida – 201301
Tel. 91-4587717-25
Fax: 91-4587726
Shri V.N.Shukla, Director (Special Applications)
shuklavn@hotmail.com
- **Level: Product/ Subsystem**
Software Product
- **Description**
It is a multilingual communication tool to Support Business/ Academic activities. It has front-end in Hindi/ English with Remington Keyboard support. The package generates the Labels/ Reports in Hindi. It has letter drafting facility using MS-Word. The package supports Mail/Merge facility in Hindi/ English and Data Back-Up Facility.
- **Encoding Standards**
The storage code is ISCII.
- **Portability/ Expandability**
Expandable to Document Management System. The system can be integrated with MS word or any other windows based Word Processor
- **Type of Technology**
Tool
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide, to use and configure the system, is prepared.
IPRs
It is being applied for.
Testing
Working successfully at various organisations like ICMR, New Delhi & Pondichery, CHD New Delhi and NIH Roorkee, etc.
- **Potential beneficiaries**
Offices Using Address Databases
- **User Tie-ups**
ICMR, New Delhi
Elitex Group, MIT

4.13 Morphological Analyzer and Generators for Tamil

- **Technology Developer**
Anna University
School of Computer Science & Engineering
Chennai - 600 025
Tel. 044-2351723 Fax: 044-2350397
Dr. T.V.Geetha/Ms. Ranjani Parthasarathi
rp@annauniv.edu
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
This software is a complete morphological Generator & Analyzer for Tamil nouns, verbs, adjectives and Postposition. Morphological Generators is one of the two important tools for language processing. Morphological analyzer is another basic tool required for language processing. Given any word or a group of words, it analyzes the word and determines the root and all the other add ones that it has taken.
- **Encoding Standards**
The code has been developed using Java. It uses a specially designed internal code instead of storing string. The data storage is Unicode compatible.
- **Portability/ Expandability**
The system is developed in Java hence fully portable. The tool can be used in any of the available platforms. The tool is developed using object oriented concept so it can be expanded as per requirement. This tool is a collection of modules such as verb generator and noun generator. Modules can be added to this tool and also it can be added as a module to any other language tool which needs it.
- **Type of Technology**
Tool
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide, to use and configure the system, are under preparation.
IPRs
Not yet applied.
Testing
The system is being tested by linguists.
- **Potential beneficiaries**
All the agencies requiring Tamil Language processing capabilities. It can be integrated into Tamil Language Software products.
- **User Tie-ups**
None



Tools

4.14 Morphology for Telugu and Kannada

- **Technology Developer**
University of Hyderabad
Dept. of Computer & Information Sciences
P.O. Central University, Hyderabad 500 046 (AP)
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Fax: 040-3010120, 3010145
Prof. K. Narayan Murthy (CI)
knmcs@uohyd.ernet.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
Morphological Analyzers and Generators to analyze the internal structure of words and for generating complete word forms from its parts. Required for language teaching/learning, spell checking, syntactic parsing, translation, etc.
- **Encoding Standards**
The storage code is ISCII.
- **Portability/ Expandability**
Will be integrated with our editor, spell checker, OCR system, UCSG parsing systems and MAT translation systems.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are being prepared.
IPRs
Not yet applied
Testing
Being tested against CIIL, Mysore corpora.
- **Potential beneficiaries**
Language Teachers/Learners, Researchers and Developers working on Spell Checking, Syntactic Parsing, Translation, etc.
- **User Tie-ups**
None

4.15 Sanskrit Authoring System (SAAS)

- **Technology Developer**
Centre for Development of Advanced Computing
Ramanshree Plaza, 2/1, Brunton Road,
Bangalore - 560 025
Tel. 080-5584205(O) 080-3309215(R)
Fax:080-5247724
Prof. V.V.P. Ramanujan
rama@cdacb.ernet.in
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Editors, Databases and utilities for Sanskrit authors – including index, concordance, data source, hyperlink, etc., quotations extraction, sources.
- **Encoding Standards**
ISCII, GIST-SDK
- **Portability/Expandability**
Compatible to all window platforms.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide to use and configure the system is under preparation and will be ready in a month.
IPRs
Copyright to be Processed.
Testing
To be organised.
- **Potential beneficiaries**
Sanakrit Authors, Researchers, Linguists.
- **User Tie-ups**
To be established.



Tools

4.16 DESIKA-Parser for Sanskrit

- **Technology Developer**
Centre for Development of Advanced Computing
Ramanshree Plaza, 2/1, Brunton Road,
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Fax:080-5247724
Prof. V.V.P. Ramanujan
rama@cdacb.ernet.in
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Word/Sentence analysis of Sanskrit input using Paninian grammar etc.
- **Encoding Standards**
ISCII
- **Portability/Expandability**
Gist card required
- **Type of Technology**
Tools
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide to use and configure the system is under preparation and will be ready in a month.
IPRs
Copyright by C-DAC
Testing
To be organised
- **Potential Beneficiaries**
Any Sanskrit Enthusiast/Learner/Students
- **User Tie-ups**
To be worked out (Rashtriya Sanskrit Sansthan to begin with).

4.17 Publishing Websites on CDROM's

- **Technology Developer**
Indian Institute of Technology
Department of Computer Science & Engineering
Kanpur- 208016
Phone: 0512-597618
Fax : 0512-590725
Professor T.V.Prabhakar
tvp@iitk.ac.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
In this work it is proposed to publish websites on CD ROMs. The problem of mirroring a website is addressed. A tool is developed for creating a mirror of website and then solve the associated problems. Browsing on the CD ROM has the same look and feel of original website. A applet is also developed for synonym-based search of such CDROM content with provision for pluggable dictionaries, which contain synonym definitions. It can run on Linux and Windows platforms.
- **Encoding Standards**
Not relevant since existing format of the site will be used
- **Portability/Expandability**
Portable and expandable- uses WebL and Java
- **Type of Technology**
Tools
- **Readiness for ToT**
Documentation
Installation guidelines and User's guide, to Use and configure the system, are being prepared.
IPRs
Technology uses published standards. Nothing is proprietary
Testing
To be organised.
- **Potential Beneficiaries**
CD-ROM publishers
- **User Tie-ups**
None



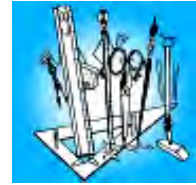
Tools

4.18 eXtensible Chhand Markup Language

- **Technology Developer**
Indian Institute of Technology
Department of Computer Science & Engineering
Kanpur- 208016
Phone: 0512-597618
Fax : 0512-590725
Prof. T.V.Prabhakar
tvp@iitk.ac.in
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Metric prosody is a form of poetry which is characterised by the rhythm and pattern. This is a context sensitive grammar. Standard tools like Lex and YaCC cannot be used to capture the grammar of meters. The objective of this project is to create a user friendly tool which takes bicomponential input:- the rules of the meter and the metric text, and recognises the meters in the text according to the rules. Here XML is used to define the specification interface for the rules. The specification language is capable of defining metric prosody in many natural languages. XML was chosen because of its strength as a meta-language and availability of parsers like DOM.
- **Encoding Standards**
ASCII, ISCII, font based
- **Portability/Expandability**
Portable and expandable since it uses XML
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to use and configure the system, are being prepared.
IPRs
None
Testing
No alpha, beta testing done yet.
- **Potential Beneficiaries**
Literary scholars
- **User Tie-ups**
None

4.19 A Devanagari Search Engine for Unicode Documents with Compression

- **Technology Developer**
Indian Institute of Technology
Department of Computer Science & Engineering
Kanpur- 208016
Phone: 0512-597618
Fax : 0512-590725
Professor T.V.Prabhakar
tvp@iitk.ac.in
- **Level: Product/ Subsystem**
Software Product
- **Description**
A search engine capable of searching the web documents written in languages other than English, is highly needed, especially when more and more sites are coming up with localized content in multiple languages. In this thesis, a web based Search Engine for Indian Languages has been implemented. This software allows full-text indexing and searching of a database of UTF-8 documents written in Brahmi-based Indian Language. The Search engine gathers the HTML documents from the web, indexes and compresses the documents, then searches for the given keywords. The main features of the search engine are phonetic tolerance, compression and indexing, leading and trailing substring matches for keyboards, search through compressed documents and WYSIWYG front end for Indian Languages.
- **Encoding Standards**
It is Unicode based.
- **Portability/Expandability**
It is portable and expandable.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Installation guidelines and User's guide, to Use and configure the system, are being prepared.
IPRs
Not yet applied
Testing
Alpha Beta testing not done yet.
- **Potential Beneficiaries**
Browser users, those who visit Indian languages sites.
- **User Tie-ups**
None



Tools

4.20 Webdunia Language Tools

➤ **Technology Developer**

Webdunia.com (India) Pvt. Ltd.

Uttam Building, 7/2 New Palasia

Indore (MP)-452001 INDIA

Tel : 0731-548550/1/2/3/4

Fax : 0731-548555

Sh. Vinay Chhajlani, MD

shishir@webdunia.com

➤ **Level: Product/ Subsystem**

Both Software Products & Subsystem

➤ **Description of Tools**

1. **Webdunia Browser**-enables you to connect to the Internet to gain fast access to data, information, news and opinions. Its menu bar and dialog window can be viewed in all Indian languages. It is developed in VC++ on windows platform.

2. **Webdunia Composer**-helps in composing mails in 11 different Indian languages in conjunction with outlook express. It is developed in VC++ on windows platform.

3. **Webdunia Pad**-is a full-fledged multilingual word processing application. The menus and dialogs interface can be set to the language of user's choice. Documents can be prepared in eleven Indian languages along with English. It is developed in VC++ on windows platform.

4. **Webdunia Type-n-cast**-is a utility which helps you to type and paste Indian language text in an active application, where it is needed. Text can be pasted in 11 Indian languages. It is developed in VC++ on windows platform.

5. **Webdunia Software Development Kit**-has been provided mainly for developers. This is a full-fledged Active X control made to be embedded in any application on any development platform. It is an editor window, which facilitates typing in Indian Languages using different keyboards besides all text formatting operations. It is developed in VC++ on windows platform.

6. **Webdunia's WMS (Web-Mail-Service)**-has a complete multilingual email service and infrastructure set up, giving our partners the ability to experience a superior, feature-rich and comprehensive email service. CORPORATE / GOVT. / SEMI-GOVT. / INDIVIDUAL can provide email under their own brand name as Webdunia works seamlessly in the background to

ensure uninterrupted service. Email enhancements, upgrades and new features are seamlessly introduced at the server level, making adding functionality easy and avoiding costly delays caused by shipping, installing, testing and debugging of software.

1. **Features of the Mail: The most feature rich mail**
Web based as well as POP3 Multilingual Mail Service

1. Multilingual Mailing System. (11 Languages)
2. Multilingual Mail Sending And Receiving In Any Email Client Or From Other Site.
3. Secured authentication Of Users Using SSL.
4. Send, receive, forward and reply to email messages
5. Store sent and received mail
6. Send and receive attachments (size varies depending on amount of storage)
7. Create, delete, and manage folders.
8. Address book With Facility To Import Entire Outlook Address Book Onto our Mailing System.
9. Spell check.
10. Multiple POP retrieval And Storing Facility.
11. Settings: Signatures, Return address, Multiple Personalities, change password, auto-response, save copies of outgoing mail
12. Send and receive HTML-formatted messages
13. Sorting functions
14. Vacation Reply
15. Mail Blocking for Specific Mail Address And Specific Domain.

➤ **Encoding Standards**

ASCII, ISCII, Unicode CompIt is Unicode Compliant.

➤ **Portability/Expandability**

Available for Windows Platform & work under progress for Linux.

➤ **Type of Technology**

Tools

➤ **Readiness for ToT**

Documentation

Help/user documents available.

IPRs

Webdunia.com (India) Pvt. Ltd.

Testing

Tested & in use.

➤ **Potential Beneficiaries**

Corporate, Government/Semi-Government Bodies, Pvt. Sectors & all Individuals.

➤ **User Tie-ups**

None



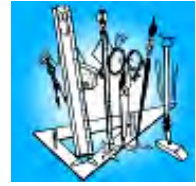
Tools

4.21 Fonts and Keyboard Handler

- **Technology Developer**
Modular Infotech Private Limited
26A, Electronic Co-operative Estate
Pune-Satara Road, Pune-411009
Tel. : 91-20-4223342
Fax : 91-20-4225896
Shri M.N. Cooper
mncooper@modular-infotech.com
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Unlike English, Indian language requires composition. Here it is required to substitute one string of key code sequence with another to form a conjunct character. Different matras and exceptions should be properly displayed as per language rules. The fonts are designed to support a very large set of conjuncts. The fonts are available in TrueType format or Adobe type1 format.
- **Encoding Standards**
There are as yet no acceptable standards on Indian language fonts. A variety of keyboard layouts are supported for each language.
- **Portability/ Expandability**
The keyboard handler and fonts can be installed in Windows 95 to Windows 2000. It works with most of the applications.
- **Type of Technology**
Font Technology
- **Readiness for ToT Documentation**
Help files and user manual available
IPRs
Belongs to Modular Infotech Pvt. Ltd.
Testing
Has undergone extensive testing
- **Potential beneficiaries**
Indian community wanting to use Indian language on PC.
- **User Tie-ups**
We are marketing Keyboard handlers and fonts under the name of Shree-Lipi. It has a user base over 40,000.

4.22 Indica Multilingual Solution

- **Technology Developer**
Summit Information Technologies Pvt. Ltd
816, Phase V, Udyog Vihar,
Gurgaon-122016
Tel. : 916-347380-84
Fax : 916-347136
Shri Sunil Khullar
sunilkhullar@indya.com
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Fonts: A library of over 250 very high quality fonts in all Indian languages.
- **Encoding Standards**
N.A.
- **Portability/ Expandability**
Fonts are available as PostScript Type1, TrueType, OpenType or PFR for Web.
- **Type of Technology**
Tools
- **Readiness for ToT Documentation**
Ready
IPRs
Fonts like Chanakya, Geetanjali, Panchari etc.
Testing
The Font are being used with Indica in an installed base of over 20,000 users.
- **Potential beneficiaries**
Software development companies developing eGovernance applications for various Govt deptts. State governments who would like to buy enterprise license which will meet all their text and data processing requirements.
- **User Tie-ups**
Custom development for end-users and Software developers.



Tools

4.23 Kannada Fonts

- **Technology Developer**
Indian Institute of Science
Department of Electrical Engineering
Bangalore-560012
Tel. : 080-3092222, 3466022
Fax : 080-3600683
Prof. V. Vinay, Prof. N.J. Rao
njrao@mgmt.iisc.ernet.in
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
Developed high quality glyphs for Kannada in Metafont. This can be integrated with the Latest, text composing system to generate high quality output.
- **Encoding Standards**
Trying to port to the standards imposed by the Karnataka Government
- **Portability/ Expandability**
The font can be used on all unix/linux machines.
- **Type of Technology**
It is currently written in the metafont programming language.
- **Readiness for ToT**
Documentation
Minimal.
IPRs
None
Testing
The main aim of developing these fonts was to throw the fonts open to public domain. We are in a position to share our design with any organization.
- **Potential beneficiaries**
Anybody who wants to use Kannada fonts.
Anybody who want to use Latex for high quality composing, especially of scientific/ mathematics articles or books.
- **User Tie-ups**
None envisaged currently.

4.24 Font Converters and Other Tools

- **Technology Developer**
Indian Institute of Information Technology
Language Technologies Research Centre
Gachibowli, Hyderabad-500 032
Tel: 3001412 or PABX 3001971
Fax: +(91) (40) 3001413
Prof. Rajeev Sangal, Director
sangal@iiit.net
- **Level: Product/ Subsystem**
Software Subsystem
- **Description**
 1. **Font Converters** : Converters among various fonts/glyphs. Between ISCII and a large number of Devanagari fonts. Technology developed for building converters quickly.
 2. **Indian language support on linux** : Indian language TTS support on linux alpha version rxpt-idev which works for all application running under rxpt in x-windows.
 3. **Indian language support for browser** : (a) Server is in ISCII (character based) (b) client side may have any font installed in the browser (c) font independent (with the help of converters from/to ISCII) (d) platform independent.
 4. **Corpus and other tools** : (a) language detector which figures out the language of an unknown text (b) corpora organisation and search tools (c) word and n-grams.
- **Encoding Standards**
ISCII
- **Portability/ Expandability**
Open source code under GPL therefore users can easily adapt it for their use.
- **Type of Technology**
Tools.
- **Readiness for ToT**
Documentation
To be prepared.
IPRs
Yes. (Available for free under GPL license).
Testing
Not done yet.
- **Potential beneficiaries**
Anybody having access to the internet and wanting to use Indian languages.
- **User Tie-ups**
None



Tools

4.25 Aakanksha

- **Technology Developer**
Banasthali Vidyapeeth
Banasthali (Rajasthan)
Tel. 01438-27847/51(O)
Fax: 01438-27850
Prof. Rekha Govil
rekhagovil@yahoo.com
- **Level : Product/ Subsystem**
Software Product
- **Description**
Aakanksha is a complete visual environment in Hindi for children having three modules :
Ankan-for learning Numbers
Akshar-for learning alphabets
Aakar-for drawing and coloring
It is a play environment web enabled. Children should enjoy it even if they do not know Hindi, in fact they can learn Hindi using Aakanksha.
- **Encoding Standards**
Uses ISCII fonts.
- **Portability/ Expandability**
Web enabled, needs a browser on any platform.
- **Type of Technology**
Tools
- **Readiness for TOT**
Documentation
Online help plus a manual available.
IPRs
Not yet applied
Testing
Educational testing remains.
- **Potential beneficiaries**
Children of any kind, age and breed.
- **User Tie-ups**
None

4.26 Gist-II ASIC

- **Technology Developer**
*Centre for Development of Advanced Computing
GIST Group*
Pune University Campus, Ganesh Khind Road
Pune-411007
Tel. : 91-20-5694000
Fax : 91-20-5651111
Shri M.D. Kulkarni
mdk@cdac.ernet.in
- **Level: Product / Subsystem**
Engineering sample of GIST-II chip. Prototype board based on Gist-II chip.
- **Description**
CRT Controller.
Color Support.
Support up to 2 MB DRAM .
Support up to 2 MB SRAM.
Support up to 2 MB ROM.
16 bit peripheral interface.
Printer interface.
AT Keyboard Interface.
Gen lock.
Operates in PC mode and Terminal mode.
Max. operating Freq – 40 MHz.
- **Encoding Standards**
Not Applicable.
- **Portability / Expandability**
Not Applicable.
- **Type of Technology**
ASIC (using 0.8 micron Technology)
- **Readiness for TOT**
Documentation
Internal Diagrams for Gist-II
Gist Terminal prototype board.
All related documents
IPRs
Owned by C-DAC Pune. (Sponsored by DSIR)
Testing
Full fledge Gist Terminal VT-52, VT-100/200 compatible
Gist Terminal has been developed.
- **Potential beneficiaries**
Multilingual support to Various Hardware products and Video products.
- **User Tie-ups**
Manufacturer