Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details





Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/introduction

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### Introduction

Introduction to Jellow Basic AAC Communicator

Jellow Basic Communicator is a friendly Augmentative and Alternative Communication (AAC) solution that uses icons to aid communication in children learning to speak or those with difficulty with speech and language.

Jellow Basic is conceived and designed exclusively for children or early learners. Jellow Basic helps children to communicate as well as learn to speak – especially children with Autism, Cerebral Palsy, Dyslexia and other Oral Motor Disabilities.

Jellow Basic has already been established as a reliable platform. And has been recognized for its ability as an effective communicator with international awards as affirmation, viz., the Unicef Innovation Funds Award, National Award, Microsoft Design Expo Award, mBillionth South Asia Award and others.

Jellow Basic Communicator has been deliberately made available at free of cost as a gesture of inclusiveness, so that it remains easily and widely accessible, especially to those children who need such assistance the most.

Details about Jellow Basic are available at www.jellow.org



Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator-0/vision

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### Vision

- A Learning-Communication System

Jellow Basic Communicator embraces the following UN SDG goal:



Quality Education – SDG goal # 4

Which supports early childhood development, care, and inclusive education.

Jellow Basic aims at "imparting holistic education, through usage of technology mainly for the needy and underprivileged population" with focus on children with disability.

Use of Jellow Basic Communicator will promote inclusion of children with Speech and Language Impairment in the education system. Jellow Basic gives children with special needs to be a part of inclusive education and be able to participate in communicating in the learning process with the help of an AAC, and be active participants in the classroom and extra-curricular activities.

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/unique-features-jellow

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### **Unique Features of Jellow**

- Especially Designed for Children



#### **Child-friendly:**

Jellow Basic is conceived and designed exclusively for children or early learners. The graphic icons and the phrases in simple language are specially designed to be child-friendly.

Jellow Basic has a collection of over 1200 graphic icons specially designed in-house to be child-friendly and which are easy to understand. In addition to this, Jellow Basic has a vocabulary of over 10,000 pre-made sentences addressing the child's needs. These sentences cover most of the communication requirements of the child. These pre-made sentences make it easy for a child who cannot form accurate sentences, to communicate.



Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/unique-features-jellow

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

#### Easy-to-use interface:

The easy-to-learn interface and visually appealing icons of Jellow Basic make it is an ideal solution for beginner-level communicators. Jellow is simple, intuitive and easy to use.

Jellow is based on an extremely simple interface to create speech. By clicking the LEARN button and then the buttons on the left you can create these sentences: I like to learn, I want to learn, I want to learn some more and using the buttons on the right: I don't like to learn, I don't want to learn, I want to learn less. It uses 1200 icons to generate 10,000 premade sentences all created inhouse.



#### **Culture Specific Icons:**

Jellow Basic Communicator is customised to socio-cultural contexts. So, depending on the language one chooses, the relevant food, festivals and events get uploaded.

#### Emotional-Language Protocol (ELP):

A novel Emotional Language Protocol (ELP) was conceived in order to enhance the language ability of Jellow Basic. ELP represents the 6 core expressive icons of the interface. Using these core buttons along with the central category buttons, the child can very easily communicate his/her likes, dislikes, and needs with others.



Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/unique-features-jellow

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

#### **Multiple Languages:**

Jellow Basic Communicator is now available in the following languages: English (Indian, UK, USA, Australian), Hindi, Marathi, Bengali, Tamil, French, Spanish and Deutsch(German). This proposal will help us outreach Jellow Basic in an additional 15 Indian languages representing the East, West, North and South of our country.

#### Iterative design process:

Jellow Basic's user-friendly interface along with its graphic icons and vocabulary was designed iteratively across a period of several years based on constant feedback from parents, speech therapists, teachers and children.

#### **Customisation:**

Jellow Basic can be customized to individual needs by including one's own choice of words and sentences, along with pictures and icons.



### **Accessibility:**

Jellow Basic has built in accessibility features so that it can also be used by persons with visual disability. Additionally, Jellow Basic can be connected to external switches for use by those with extreme motor-neuron difficulties.



Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/unique-features-jellow

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

#### A Complete Communications System:

Jellow Basic is a complete communication system conceived in the following variations to cater to the needs of children with a varying range of disabilities. Within the context of India, it is a solution that has both low as well as high tech options, that comprises:

- Jellow Book: with Flash Cards, E-book/PDF Booklet
- Jellow Desktop Application: http://www.jellow.org/web/
- Jellow Mobile/Tablet: Android application is available on Google Play store and iOS application is available on Apple app-store.
- Jellow Input Devices: Switch Access to external devices.
- Jellow Customized: Make your own board by adding your own words and pictures.

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/design-process

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### The Design Process

- Iterative Design with Feedback

#### **An Iterative Design Process:**

The design, development, distribution and promotion of Jellow Basic has gone through multiple iterations. The development of Jellow Basic follows the iterative process of user-centric, participatory design as we continually improve the application and add new features into the application.

#### Designed with Feedback:

As mentioned, Jellow Basic is designed iteratively with regular feedback from users namely children, parents, therapists, teachers, care givers. To that end we've had 12+ Focus Group feedback workshops across the country.

The following gives an idea of the nature of the feedback received vis-à-vis the user categories:



#### **Collaborative Inputs:**

It has been our endeavor to work very closely with our collaborating/partnering institutions and stakeholders, namely, rehabilitation therapists and caregivers of

individuals with speech impairments in order to obtain their valuable inputs and suggestions during the entire product development/improvement process.

#### **Interdisciplinary Team Effort:**

We have an extraordinarily diverse interdisciplinary team involving experts from different fields including strategy, design, computer science, clinical practice, research, as well as outreach through marketing. These experts have taken the respective leads for the different aspects of the Project.

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/design-process

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details



### **Longitudinal Study:**

Jellow Basic's efficacy has been further substantiated through research by carrying out 6 months-long longitudinal studies with autistic children, one at Nair Hospital, Mumbai, and the second one at the University of Connecticut, USA.

#### Partnerships:

Jellow Basic has collaborated with multiple partners - hospitals, Ministries, Unicef, specialist Institutions and Universities, NGO's, etc. Jellow Basic is currently working on forming further such collaborations.

### Participation at Conferences and Exhibitions:

The Jellow team continually participates at various national and international conferences and exhibitions on disability in order to get valuable feedback from peers.

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/outreach-and-distribution

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### **Outreach and Distribution**

- Learning and Language Development

#### Outcome, Outreach and Distribution of this Project:

The following are the proposed milestones conceived as project outcomes in the future:

- (a) translate into at least 15 additional languages,
- (b) conduct training workshops to create awareness,
- (c) distribute and make it accessible to any child who has difficulty with speech and language.

#### A. Translation:

Jellow Basic will be translated and made available in the following additional languages - Assamese, Gujarati, Kannada, Khasi, Maithili, Malayalam, Manipuri, Gurmukhi, Mizo, Nepali, Odiya, Punjabi, Rajasthani, Telugu, Urdu.

#### **B. Conduct Training Workshops:**

As an outcome of this project, Jellow Team will conduct online workshops to different groups consisting of therapists, teachers, caregivers and parents located in different parts of the country on a regular basis.

#### C. Install and Distribute to Target Beneficiaries:

Jellow Basic in different Indian languages will be distributed free of cost to children from different parts of the country.

#### D. Our Plans for the future are

- 1. Spread and outreach in India and Abroad,
- 2. Have it available on all Indian Languages including all the major languages of the world,
- 3. Make it more playful for the children and be able to customise it according to their needs.
- 4. Introduce other versions of Jellow as shown below:

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak

by

Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/outreach-and-distribution

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details



#### E. Participation in Conferences:

6-8 Jan 2017

Indian Speech & Hearing Association Conference, Kolkata; Apps in Speech and Hearing

12 Jan 2017

1Special Place - Online webinar through Facebook

18 Feb 2017

Drishti Symposium, Bandra

11 August 2017

Wadhwani Research Center for Bioengineering (WRCB) Industrial Day, VMCC, IITB

7 October 2017

4th Annual Conference on Cognitive Science, Hyderabad

18 November 2017

MISHACON, Mumbai - Maharashtra chapter of Indian Speech & Hearing Association - Annual conference; Technotalk: Translating ideas into apps.

21 Feb 2018

Ramakrishna Mission Vivekananda Educational & Research Institute, Coimbatore.

National Conference on Inclusive and equitable quality education and sports for the empowerment of women with disabilities

9 April 2018

Sign and Sense Conference, ALBA, Lebanon; Design of Icon-driven communication system for children.

30 August 2018

Singapore Educational Technology Conference; Design of an icon-driven AAC system.

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak

by

Prof. Ravi Poovaiah and Dr. Ajanta Sen

IDC, IIT Bombay

Source:

https://dsource.in/resource/jellow-basic-aac-communicator/outreach-and-distribution

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

6 April 2019

Global Health & Innovation Conference, Yale, USA; Jellow Senior

25-27, Oct 2019

Conference Empower 2019 at IIT Delhi

3-4, Dec 2019

Conference in Chennai conducted by the Tamilnadu state Govt. on World Disability day.

5 Dec 2019

FDMSE Ramakrishna Mission Vidyalaya, Coimbatore, Amaze Trust, Coimbatore.

17-18, 2019

National Conference on Disability, Accessibility, Inclusion, and Wellbeing TISS, Mumbai.

F. Participation in Exhibitions and Workshops:

8 Dec 2016

**Tata Institute of Social Sciences** 

Dec 2016, 2017, 2018, 2019, 2020 (All 5 years)

Techfest, IIT B

14 Oct 2017, 25 Nov 2017, 22 Feb 2020

Jellow Workshop IDC

10 Dec 2017

St Anne's school, Malad

13 Jan 2018

**Bhayender East** 

17 Feb 2018

LifeAsia Community Empowerment, Pune

17 Mar 2018

Nair Hospital, Mumbai

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak

by

Prof. Ravi Poovaiah and Dr. Ajanta Sen

IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/outreach-and-distribution

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

23 Mar 2018

Muskaan Foundation, Mumbai

2 Apr 2018

Skills & Abilities School, Mumbai

17 May 2018

Physio-occupational-speech academy of therapists, Borivali, India

25 May 2018

Action for Ability Development & Inclusion, Delhi

22-23 June 2018

4 workshops: Nayi Disha, Hyderabad; Shraddha Special School; BHEL school; Artillery Army School

6 October 2018

2 workshops: Bengaluru - Cornerstone therapy solutions; Astitva Foundation

23 Nov 2018

V-Excel education trust, Nashik

2 Dec 2018

4 Chennai workshops- Spastics Society of TamilNadu, Arvind foundation, Sankalp foundation, V-Excel

17 Feb 2020

Spandan Holistic Mother & Child Care Hospital Govandi

5-7 March 2020

3 Day Innovation Exhibition, Nehru Science Centre

3 Apr 2020, 25 Apr 2020, 27 Apr 2020, 06 Jun 2020, 29 Aug 2020, 21Nov 20, 05 Dec 2020 **Jellow workshops Online** 

08May 2020

Amar Seva Sangam (Chennai); Online

21 May 2020

Global Accessibility Awareness Day (GAAD) 2020

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak

by

Prof. Ravi Poovaiah and Dr. Ajanta Sen

IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/outreach-and-distribution

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

A11Y Expo

Virtual Exhibition of Assistive Technology

11July 2020

SPARC India; online

29 Aug 2020

Jellow's MMB Workshop; online

03 Oct 2020

Disha Charitable trust Goa; online

10 Oct 2020

Autism Society West Bengal; online

07 Nov 2020

Bethany Society Assam & ASHA school Assam; online

25 Nov 2020

ASHA school, Chandimandir, Chandigarh; online

29 Dec 2020

Amar Seva Sangam MMB workshop; online

Digital Learning Environment for Design - www.dsource.in

Design Resource

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/awards-received

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### **Awards Received**

- A humble affirmation of our work

Jellow Basic communicator has been conceived and designed by researchers at IIT Bombay.

We are very proud to have won these prestigious Awards:

- the Unicef Innovation Fund Award, 2017
- the National Award, 2018 for the Empowerment of Persons with Disabilities
- the mBillionth South Asia Award, 2018
- the Nipman Foundation Microsoft Equal Opportunity Awards, 2018
- the Microsoft Design Expo Award, 2004



Digital Learning Environment for Design - www.dsource.in

Design Resource

## Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator-0/presentation-slide-show

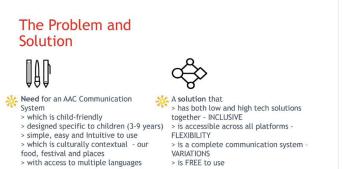
- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### **Presentation - Slide Show**

#### Download:

• Jellow Basic AAC Communicator.....













Digital Learning Environment for Design - www.dsource.in

Design Resource

## Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator-0/presentation-slide-show

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details



Unique Features: **DESIGNED FOR CHILDREN** 



Unique Features: CHILD FRIENDLY ICONS



Unique Features: **EASY TO USE INTERFACE** 



Unique Features: **CULTURE SPECIFIC ICONS** 



Unique Features: **EMOTIONAL-LANGUAGE-PROTOCOL** 



Digital Learning Environment for Design - www.dsource.in

Design Resource

## Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

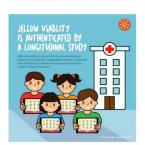
https://dsource.in/resource/jellow-basic-aac-communicator-0/presentation-slide-show

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

Unique Features: MULTIPLE LANGUAGES



Unique Features: LONGITUDINAL STUDY



Unique Features: **CUSTOMISATION** 



Unique Features: MADE ACCESSIBLE



The User - Story One - parent's point of view

Kavita, the child, learned to use the toilet within 2 weeks with help of Jellow Communicator's sequenced daily activities.



The User - Story Two - child's point of view

Jonathan, being quadraplegic, has taken to using Jellow to communicate his needs. This he does with a head-mounted pointer.



Digital Learning Environment for Design - www.dsource.in

Design Resource

## Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator-0/presentation-slide-show

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

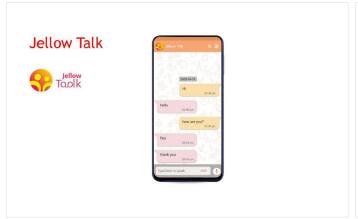




- 1. Outreach and Distribution:
   First India, then International
- 2. Incorporate into Jellow:
  all major languages in India
  major languages from around the world
- 3. Gamify Jellow for 'Play and Learn'
- 3. Launch Other Variations









Digital Learning Environment for Design - www.dsource.in

Design Resource

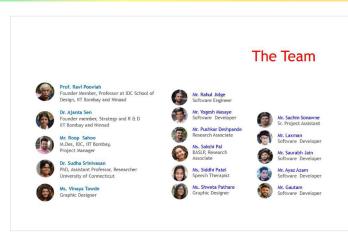
## Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen IDC, IIT Bombay

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator-0/presentation-slide-show

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details





Digital Learning Environment for Design - www.dsource.in

Design Resource

IDC, IIT Bombay

# Jellow Basic AAC Communicator

Giving a Voice to Speak by Prof. Ravi Poovaiah and Dr. Ajanta Sen

#### Source:

https://dsource.in/resource/jellow-basic-aac-communicator/contact-details

- 1. Introduction
- 2. Vision
- 3. Unique Features of Jellow
- 4. The Design Process
- 5. Outreach and Distribution
- 6. Awards Received
- 7. Presentation Slide Show
- 8. Contact Details

### **Contact Details**

This documentation and content were done by Prof. Ravi Poovaiah at IDC School of Design, IIT Bombay, Powai, Mumbai, India.

You can get in touch with him at ravi[at]iitb.ac.in, ravipoovaiah[at]gmail.com

For more details please click on this Link: www.jellow.org

You can write to the following address regarding suggestions and clarifications:

#### **Helpdesk Details:**

Co-ordinator Project e-kalpa Industrial Design Centre IIT Bombay Powai Mumbai 4000 076 India

Phone: 091-22-2159 6805/091-22-2576 7802

Email: dsource.in[at]gmail.com