

Industrial Internet of Things (IIOT)

(An Intra-collegiate Mega Competition/Exhibition)

A first of its kind mega event in the region exclusively for SMVITM students to identify the talents of the students and to promote creativity and innovation

Jointly organized by



Chandrashekar Rao Kuthyar

cs@sangamone.com

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**Shri Madhwa Vadiraja Institute
of Technology and Management**

What is IOT !!?

- The Internet of Things (IoT) is a scenario in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
- IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS) and the Internet.

Opportunities



The Internet of Things
A TRILLION DOLLAR MARKET

40 IoT Solutions – 2014

@ValaAfshar

The Internet of Things

The 'Internet of Things' will generate \$14,400,000,000 of value over the next decade¹.

There will be 40 times more devices than people on the Internet in 2020².

IDC estimates there will be approximately 212 billion things globally by the end of 2020. Extreme Networks estimates that 5 billion people will have Internet access.

¹ read.bi/1yDOOQ3 | ² <http://www.idc.com/getdoc.jsp?containerId=prUS24366813>

INTERNET OF THINGS LANDSCAPE

Platforms & Enablement (Horizontal)

Connectivity Symplic, ioBridge, buystark, ThingWorx, sensinode, NNODE, bugsworm	Open Source Platforms sense, spark, ThingSpeak, Numbers	Software Platforms sense, SmartThings, Withings, NINJABLOCKS, xively, TWINE, OSITO, zonoff	Sensor Networks MESHSYSTEMS, SAFECAST	Enabling Networks FreedomPop, SocialSign.in, Open Garden, SIGFOX	Corporates IBM, LG, CISCO, Honeywell
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Applications (Verticals)

Quantified Self Wearable Computing: GLASS, Pebble Fitness: Withings, fitbit, JAWBONE Health: BASIS, Lumo, HAPIfork, wahoo fitness, NuMetrex Family: REST, Lively, Good Night Lamp, Withings, EVADO FILIP	Lifestyle Leisure: blossom, iCA, remee, iGrill, HEMBRIGHT, sobi Pets: gibi, FITBARK Toys: sifteo, MakeLab, KAROTZ, greenoosty Music: glar Gardening: BITPONICS, plantlink, Koubachi Home Improv.: Radiator Labs, netatmo	Connected Home Home Automation: SmartThings, NINJABLOCKS, revolv, Ubi, lapka, electric imp, Wovyn Energy Efficiency: knut, nest, tado°, LIFX, WeMo, ecobee, belkin, micasaverde Security: Kwikset, ALARM.COM, Lockitron, CANARY, HomeMonitor, iSmartAlarm	Industries Retail: Nomi, euclid, placemeter Healthcare: VISI MOBILE, AdhereTech, AliveCor, TELCARE, intelligentM Automotive: Dashlabs, OpenXC, moji, SYNC, enture Smart Buildings: APOGEE ELECTRIC, Johnson Controls, Schneider electric	Industrial Internet RIVA Systems, Double Robotics, Airware, ROBOTEX, 3D Robotics Greentech: BigBelly, Axeda, SOLAR, enlightened, GRIDMOBILITY 3D Printing: Stratasys, formlabs, shapeways, MakerBot, RepRap
Building Blocks Connection Protocols: NFC, WiFi, Bluetooth, M2M, 2G, 3G, 4G, Telecom: at&t, verizon, Mobile, boost, M2M: Jasper, gemalto, Telit				
Software : amazon web-services, Parse Mobile : iOS, Android Hardware : openpilot, ARDUINO, spark, beagleboard.org Parts / Kits : MARRY MARRY, Tinkerforge, Intel, MOSORO, PINEAPPLE	Services : CAR, DRAGON, makeryst, TN, CIRCUIT Incubators : BOLT, LEONICS Labs, springboard() Funding : KICKSTARTER, indiegogo Distribution :			

Explosion of start-up activity. 612 companies in this space

Few examples and applications

HAPIfork

The HAPIfork is an electronic fork that helps you monitor and track your eating habits. It also alerts you with the help of indicator lights and gentle vibrations when you are eating too fast.



<http://www.hapi.com/products-hapifork.asp>

MyVessyl Cup

It can hold 13 ounces of liquid. The battery takes 60 minutes to fully charge and will last for 5-7 days. Also has wire-free charging.



<https://www.myvessyl.com/>

Smart Propane Tank

This super smart propane tank gauge connects to an app on your mobile device so no matter where you are, you'll always know when it's time to refuel.



<http://www.quirky.com/shop/732-refuel-smart-propane-tank-gauge>

Smart Egg Tray

Egg Minder syncs with your smartphone to tell you how many eggs you've got at home (up to 14 eggs) and when they're going bad.



<http://www.quirky.com/shop/619>

Smart Tooth Brush

The Beam Brush is a connected toothbrush that engages users with their daily hygiene routine.



<http://www.beamtoothbrush.com/toothbrush/>

Glucose Monitoring

A cellular-powered glucose meter transmits each test result to a secure server and provides instant feedback and coaching to patients. This equips doctors, nurses, diabetes educators with real-time clinical data.



<http://www.telcare.com/>

Hydroponic System

Niwa is the first fully automated hydroponic system that attends to all of your plants' needs and water them, feed them and make sure they have optimal growing conditions 24/7.



<http://gemiwa.com/>

Smart Piggy Bank

The Porkfolio wirelessly connects to an app on your device so you can track your balance and set financial goals from afar. Its nose lights up in celebration every time a U.S. coin is inserted and it holds up to \$100 in quarters.



<http://www.quirky.com/shop/607-porkfolio-save-big-with-this-pig>

Smart Washing Machine

Smart Aqualtis is the first Indesit Company washing machine designed to be integrated in 'Smart' ecosystems, covering a wide range of use cases.



<http://zigbee.org/Products/ByStandard/AllStandards.aspx>

Smart Sprinkler Control

Lono lets you control your sprinkler system anywhere, anytime with your smart phone. And the things that should be automated, finally are.



<http://lono.io/>

Smart Home Security

Canary is a complete security system packed into a single, device. It adapts to your home over time and sends intelligent notifications with HD video directly to your smartphone.



<http://canary.is/>

Fiction Arcade Machine

The Choosatron is a fun kit that assembles into a small interactive fiction game box, great for social reading and playing. As you play, you make decisions that affect the outcome of the story, and is printed on a paper scroll.



<http://choosatron.com/>

Smart Pet Game

CleverPet is a smart WiFi-connected game console for your dog. Automatically entertain and educate your dog, even when she's home alone.



<http://getcleverpet.com/>

Smart Lighting

Control your bulbs one at a time or altogether. Find just the right shade of white. Pick that perfect tone to match the moment. Or recreate any color from a photo.



<http://meethue.com/>

Bluetooth-Enabled Insoles

Shares navigation, directions and orientation.



<http://lechal.com/products.html>

Analyze with NODE+

Analyze speed, acceleration, movement, direction, shock, tilt, magnetic fields, and more.



<http://variableinc.com>

Smart A/C

Aros learns from your budget, location, schedule, and usage to automatically maintain the perfect temperature and maximize savings for your home.



<https://www.quirky.com/shop/752-aros-smart-window-air-conditioner>

Swing Analyzer

Make your Zepp Sensor multi-sport, all you need to do is purchase additional sport specific mounts and download the app.



<http://www.zepp.com/>

Smart Sleep System

Visualize your sleep cycles, understand what wakes you up, and compare nights. From the palm of your hand you can control your personalized wake-up, and fall-asleep programs.



<http://www.withings.com/us/withings-aura.html>

Blood Pressure Monitor

Simply slip on the cuff, turn on the Wireless Blood Pressure Monitor and the Health Mate app will automatically launch.



<http://www.withings.com/us/blood-pressure-monitor.html>

Smart Weather Station

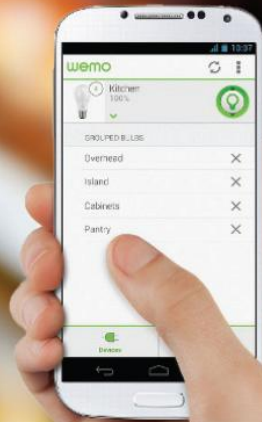
The Netatmo Weather Station allows you to use indoor temperature, relative humidity and CO2 readings to live in a healthier home.



<http://www.netatmo.com/en-US/product/weather-station/>

Smart Slow Cooker

Enjoy remote access to all your slow cooker's functions, no matter where you are.



<http://www.belkin.com/us/Products/home-automation/c/wemo-home-automation/>

Smart Bike

Valour by Vanhawks gives directions, reroutes to avoid traffic, and tracks riding metrics.



<http://www.vanhawks.com/>

Smart Tennis Racket

Track your game with Babolat's breakthrough innovation. See where you stand in the global ranking and by category within your online community.



<http://en.babolatplay.com/>

Internet-Connected Mirror

We are looking to bring a product to market that can make your life easier, while doing something you already spend time doing each day, looking at a mirror.



<https://www.kickstarter.com/projects/860592058/imirror>

Smart Garbage Cans

BigBelly alerts when it needs to be emptied so smarter collection decisions can be made.



<http://www.bigbelly.com/solutions/stations/smartbelly/>

Smart Doorlock

The Genie Smart Lock - A door lock that allows you to lock and unlock your home using your smart phone, bluetooth keyring or computer.



<http://www.geniesmartlock.com/index.php>

Smart Cardio

eCardio is a single component, dual-modality remote cardiac monitor.



<http://www.ecardio.com/>

Drop

Baking assistant that gives recipes, directions, substitutions, shopping lists, etc.



<https://getdrop.co/>

Nod

Nod transforms your movements into commands. It brings the world around you to life, as you control everything from your laptop to your living room lights with a wave of your hand.

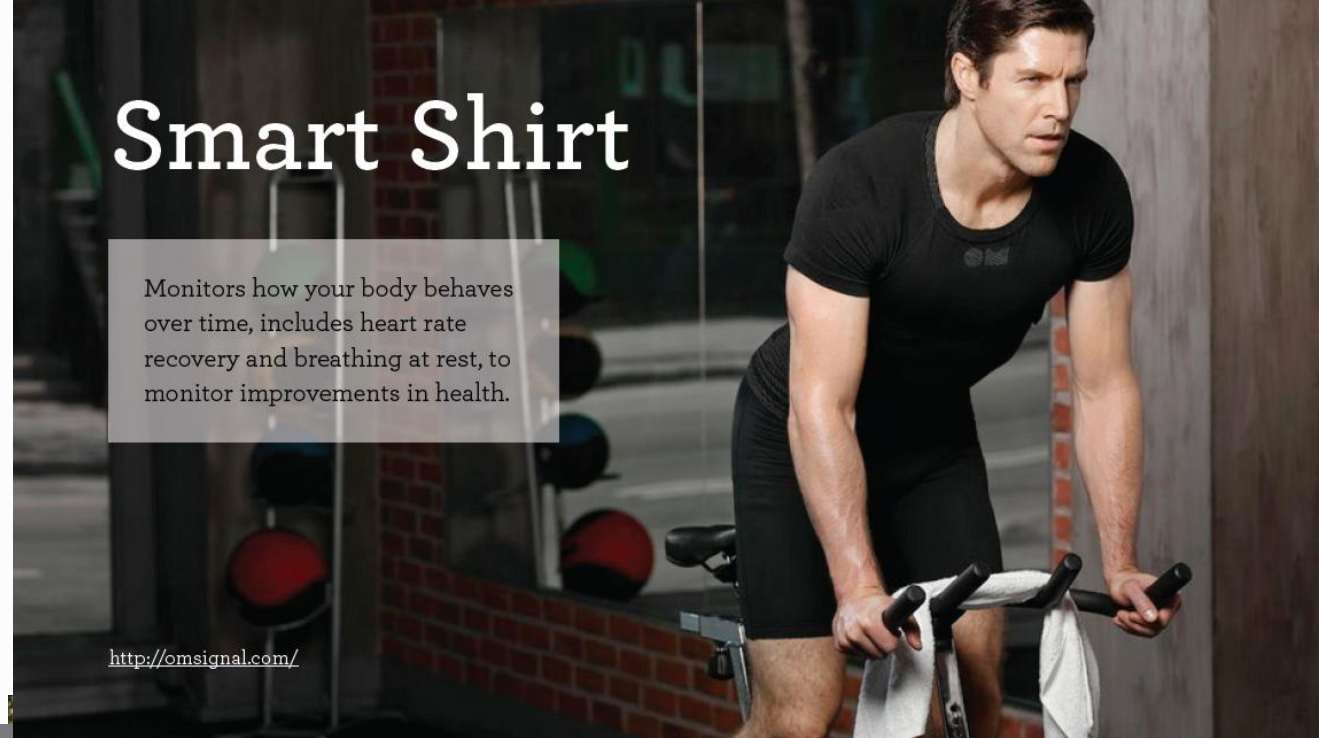
<https://hellonod.com/>



Smart Shirt

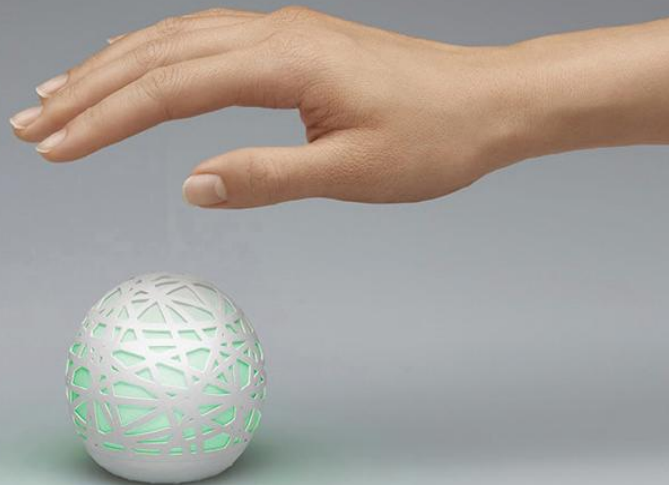
Monitors how your body behaves over time, includes heart rate recovery and breathing at rest, to monitor improvements in health.

<http://omsignal.com/>



Sense by Hello

Sense makes smart devices to track sleep behavior and monitor sleeping environment.



<http://hello.is/>

Smart Socks

Socks infused with proprietary 100% textile sensors. They are paired with a Bluetooth Smart cool and detachable anklet that delivers accuracy in step counting, speed, calories, altitude and distance tracking.

<http://store.sensoriafitness.com/>



IOT-2015

(An Intra-collegiate Competition/Exhibition)

- Student contest for building IOT projects
- Interdisciplinary teams are encouraged
- Each team may consists of maximum 4 members
- Teams should register before 23 May 2015 with the following details

Team members Name, USN, Department

- **05-Aug-2015** – Submission of Title and abstract of the Project
- **14-Aug-2015** – Submission of final project report
- **15-Aug-2015** – Exhibition/Competition

IOT-2015

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- Best **Three projects** will be awarded with Cash Prize of **Rs 10,000/team**
- **Six short listed project** will be provided with the financial incentive of **Rs 5000/team**
- College infrastructure can be utilised during the vacation to develop the model
- Rarest opportunity for the student community to meet and to present the IOT model to Academic and Industrial experts

IIOT Competition – Suggested topics

- **Civil Engineering Solutions (Next generation home, ERP for construction management)**
- **Automobile industry Industrial automation (Industrial production , sale and maintenance controls)**
- **Health care units (personal health care, Hospitals, Patient monitoring systems)**
- **Pharma solutions (drug distribution and production network)**
- **Electronics and mobile industry (smart gadgets with IOT enabled features)**
- **Retail industry (Smart cart)**
- **Scientific products (smart meter, smart thermo)**
- **Agro Industry and equipment (connected tractor, smart irrigation system)**
- **Education (Students progress and attendance monitoring system , smart Lab)**
- **Agriculture solutions (Smart water and fertilizer feeding system)**
- **Auto Water supply and control systems for City**
- **Vehicle monitoring system (remote speed control, real time location and security)**
- **Logistics (DHL, Blue dart....)**

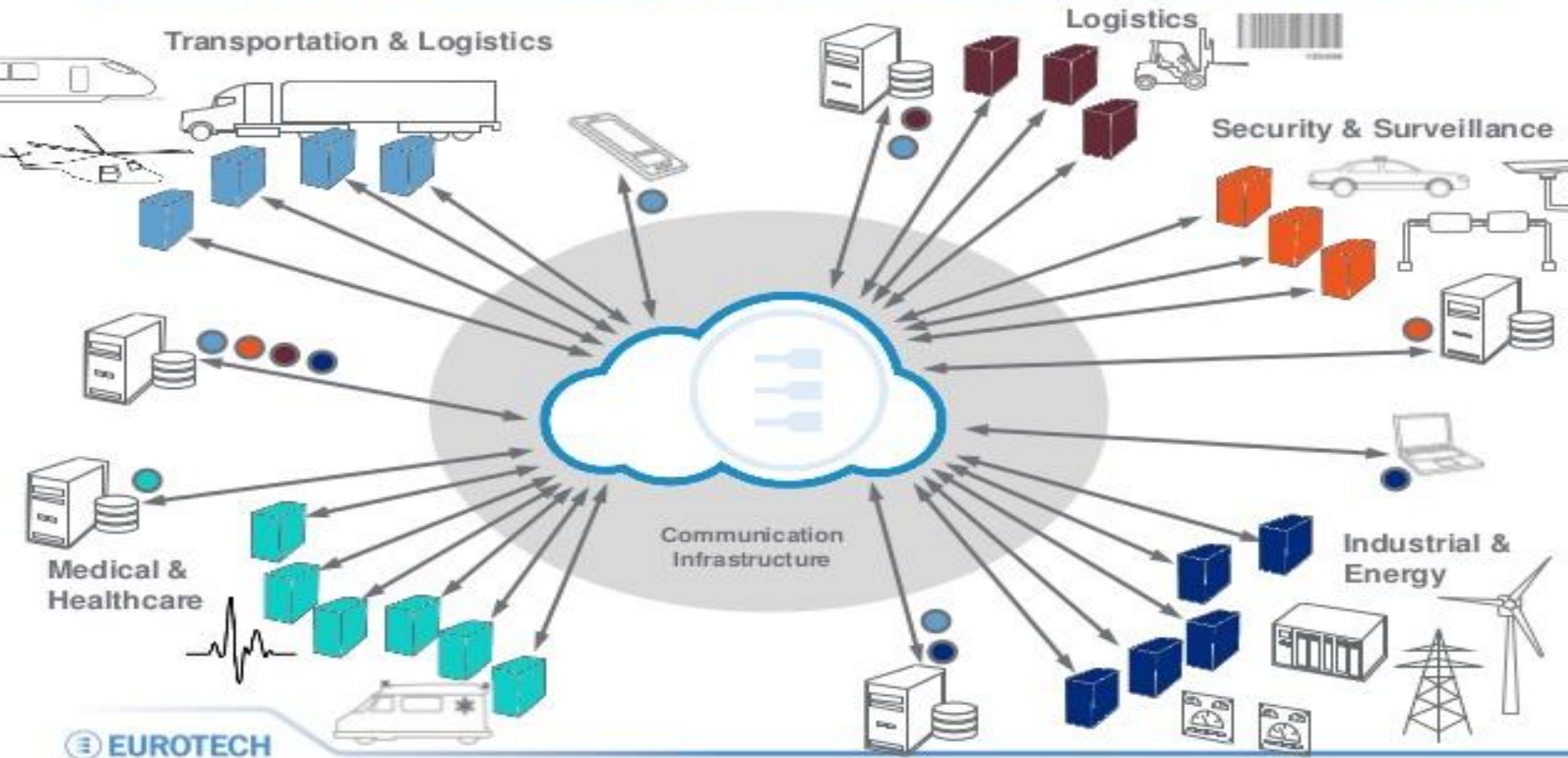
ETC.....

Organizing committee members

1. Dr. Ravindra H J, HOD(Physics) - coordinator
2. Mr. Siju V Soman, Dept. of CSE - co-coordinator
3. Mr. Ramamoorthy, Dept. of CSE - member
4. Ms. Prajnamala Rao, Dept. of ECE - member
5. Mr. Rajesh Nayak, Dept. of ECE - member
6. Mr. Mayura H N, Dept. of Mechanical Engg - member
7. Mr. Niranjana M Krishna, Dept. of Mechanical Engg - member
8. Mr. Pruthvin C Shetty, Dept. of Civil Engg - member
9. Mr. Deepak Rao, Dept. of CSE - member

The Internet of Things

Decoupling Producers & Consumers of M2M Device Data



Thank You