

# *FastTrack***PRO**

## **CERTIFIED INTERNET OF THINGS SPECIALIST (CIOTS)**



**Certification by Global  
Science and Technology  
Forum**



STEERING INNOVATION, SERVING SOCIETY

## **SYNOPSIS**

With the emergence of sensors technology and the advances in communication technologies and cloud computing, we are moving towards a new computing paradigm, which will involve trillions of connected devices – IoT, Internet of Things. IoT will transform and it requires rethinking of how we compute today. According to a report by Gartner, IoT will include 26 billion units installed by 2020, and by that time, IoT product and service suppliers will generate incremental revenue exceeding \$300 billion, mostly in services.

In addition, International Data Corporation (IDC) has looked at the components, processes, and IT support for IoT and expects the technology and services revenue to expand from \$4.8 trillion in 2012 to \$7.3 trillion by 2017 at an 8.8% CAGR, with the greatest opportunity initially in the consumer, discrete manufacturing, and government vertical industries.

Asia Pacific and North America are estimated to contribute \$92.8 billion and \$56.3 billion, respectively, by 2017. These regions are forecast to grow at a CAGR of 33.2% and 28.3%, respectively, from 2012 to 2017. There will be a growing demand for expertise in IoT in the APAC region.

This course will focus on the core technologies behind Internet of Things. This certification leverages and explores the infrastructure, communication, sensor technologies, networking technologies, data/storage/analytics and security aspects of IoT in building the next-generation computing realm, which makes a world fully connected.

After the course, participants will have a good understanding of the different pieces of an IoT system and how they interact.

## **COURSE CONTENT**

### Introduction to IoT

- What is IoT?
- Effects of IoT
- Skill set for IoT
- Challenges and barriers to IoT
- Functional Requirements of IoT

### Overview of IoT

- Communication aspects involved in IoT system
  - Wired connectivity and technologies
  - Wireless connectivity and technologies
- Power and Energy Management & Optimization
- Network Topologies for IoT
- IoT Protocols
- IoT – Technologies & Software

### Components & Elements of IoT

- Components of IoT
- Elements of IoT
  - Radio Frequency Identification (RFID)
  - Wireless Sensor Networks (WSN)
  - Addressing schemes
  - Data, storage and analytics
  - Visualization
  - Security

## Architecture of IoT system

- Internet of Things—Architecture – IoT-A
- The IoT-A Reference Model
- Cloud Computing
  - Cloud Computing in Internet of Things
  - Internet of Things with Cloud Architecture
  - IoT-related Cloud Security Issues
  - IoT-related Cloud Computing Privacy Issues
  - Building a Private Cloud to enable IoT
- Business Analytics
  - Business Analytics in IoT Architecture
  - IoT and Data Mining
  - Data Warehouse in IoT
  - Data Visualization and Tools in IoT
  - Data Mining Tool
  - BA Techniques to empower IoT's Analytical & Decision Making Capability
- Big Data Technologies
  - Internet of Things and Big Data
  - The IoT Process and its challenges
  - Understanding Big Data
  - Hadoop and MapReduce
  - Apache HBase

## Databases for IoT

- Big Data turning into “HUGE DATA”
- SQL Databases
- NoSQL Databases
- Cloud Databases

## Mobile integration to enable IoT

- Mobile Middleware
- Omni-Channel Retailing
- Mobile Loyalty
- Mobile Point of Sale
- Mobile Inventory
- Real World Mobile Integration Examples

## Security Aspects of IoT

- IoT Security Aspects
- IoT features leading to security issues
- Security Issues in IoT based on RFID
- Design Considerations for IoT Technologies

## Privacy Aspects of IoT

- Privacy Analysis
- Data Loss – RFID, Bluetooth, Big Data
- Mechanisms to Prevent Privacy Hack
- Popular Privacy Legislations
- Case Study
- Privacy Enhancing Technologies (PET)
- Few Approaches to IoT Privacy
- Practical tips to Handle IoT Privacy

## IoT Applications – Use Cases

- Smart Cities
- Smart Environment
- eHealth

## **COURSE OUTCOME**

- Understand the concepts of IoT and its impact on business & government organizations
- Understand the various components and architecture of IoT
- Understand the role of cloud computing (deployment and service models, architecture, private cloud infrastructural concerns, security and privacy concerns) in IoT
- Understand the role of data mining, business analytics and big data technologies in IoT
- Analyze and explore the security and privacy challenges in IoT

## **ASSESSMENT AND CERTIFICATION**

- Component 1: Written Examination (MCQ)
  - 40 Questions
  - 1 Hour duration
  - Closed Book
  - Score 70% to pass
- Component 2: Project Work Component (PWC)
  - Individual work
  - 2 weeks to complete from the last day of course
  - Score 70% to pass
- Certification
  - Upon passing the course, you will be awarded “Certified Internet of Things Specialist”
  - Certification body – Global Science and Technology Forum

## **WHO SHOULD ATTEND**

This comprehensive training and certification program will be of specific interest to:

- IT/IS Executives and Managers
- Business Analysts
- Project Managers
- Functional Managers
- Technology Planners
- Consultants and System Integrators
- IT Technical Services Specialists
- IT Architects
- Business Process Owners
- Risk Management Employees
- Cloud Operations Engineer
- Senior Cloud Operations Engineer
- Data Analyst – Statistics and Mining
- Data Analyst – Text Analytics
- Operations Research Analyst

## TRAINER'S PROFILE

GSTF Trainers are all subject matter experts with a vast amount of industrial experience and advanced degree either Masters or PhD. That considered in their respective areas of focus/specialization. GSTF Trainers have been training staff-members from Government Agencies, Statutory Boards, MNCs, and Education Institutes in the region such as CISCO, Seagate International, BOSCH Singapore, Verizon Wireless, MSI-Singapore and Tech Mahindra.

Mr. Parthibans , Singapore GSTF Principal Trainer

Recipient of the Hitachi Client Award for outstanding performance in the year 2014, and holds a B.E (Computer Science and Engineering), an M.E (Software Engineering), and currently pursuing a Doctorate degree with research focus on Big Data. He possesses extensive and real time experience on the technologies including Big Data, MongoDB, R Programming, Core Java, Python, Apache Storm, Kafka, Elastic Search, Continuous Query Language, OpenNLP, uCSDP-AF, HSDP, Cassandra, Redis, RabbitMQ, Hadoop, HDFS, HBase, Hive, JavaScript, RapidMiner, XML, OpenNebula, Google Maps API, Visio, Linux RHEL6, Windows 2008 R2, Carriots, Evrythng, Internet of Things. He is a GSTF Certified Trainer in Internet of Things, Big Data, Business Analytics, Cloud Computing and Cloud Security. He also holds other industry certification including Certified Developer for MongoDB and and certified in "R Programming for Data Analyst".

## DURATION

5 days (9.00 am – 5.00 pm)

## COURSE FEE SBL Claimable

RM 8,750/pax

Special Discount: 20% (applicable only to group registration of 3 and above)

Early Bird Discount: 10% (if you register at least 2 weeks before the start of the training class)

After Discount : RM 6,125/pax

Note: Additional 6% GST will be added to the above course fee.

## TRAINING DATE

20-24 February 2017

### ADMINISTRATIVE DETAILS

<b>Venue</b>	PSDC 1, Jalan Sultan Azlan Shah, Bandar Bayan Baru, 11900 Bayan Lepas, Penang
<b>Payment</b>	Crossed cheque made payable to ' <b>PENANG SKILLS DEVELOPMENT CENTRE</b> ' one week before commencement date
<b>Registration</b>	<a href="http://www.psd.org.my">http://www.psd.org.my</a>
<b>Cancellation</b>	PSDC reserves the right to cancel or postpone any program but with due notice to the company(s).

**For further information, please contact Elly Leong Chui Ling at 04-643 7909 (ext.523)  
E-mail: [ellyleong@psdc.org.my](mailto:ellyleong@psdc.org.my)**