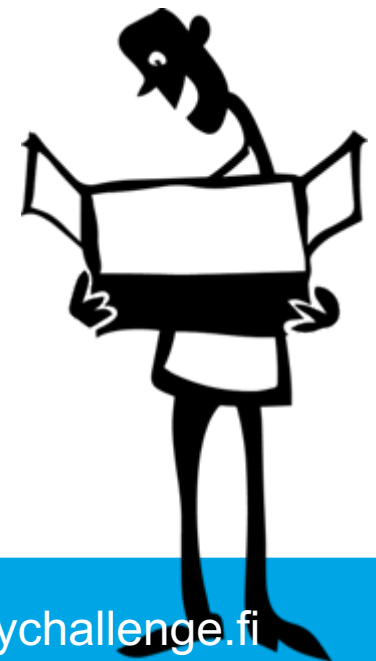




Nov. 2nd, 2017

Future City Challenge Coaching & more

Jaakko Ala-Paavola
Technology Director
Embedded & IoT
Etteplan Oyj





Design & Integration Services
for industries

Founded
1983

People
2800

Revenue
200 M€

Nasdaq
200 M€



Etteplan - Versatile expertise in equipment and plant engineering

	Engineering Management		Industrial Design and Usability		Control Systems
	System Engineering		Mechanical Engineering		Electronics
	Verification & Validation		Technical Documentation		Automation
	Plant Engineering		Electrical Engineering and Power Systems		Software Development and Embedded Systems

Human



IHMISEN
NÄKÖKULMA

Open Data



AVOIN DATA

**FUTURE
CITY**
— Challenge —
2018



ANALYTIikka
JA TEKOÄLY

Analytics / AI

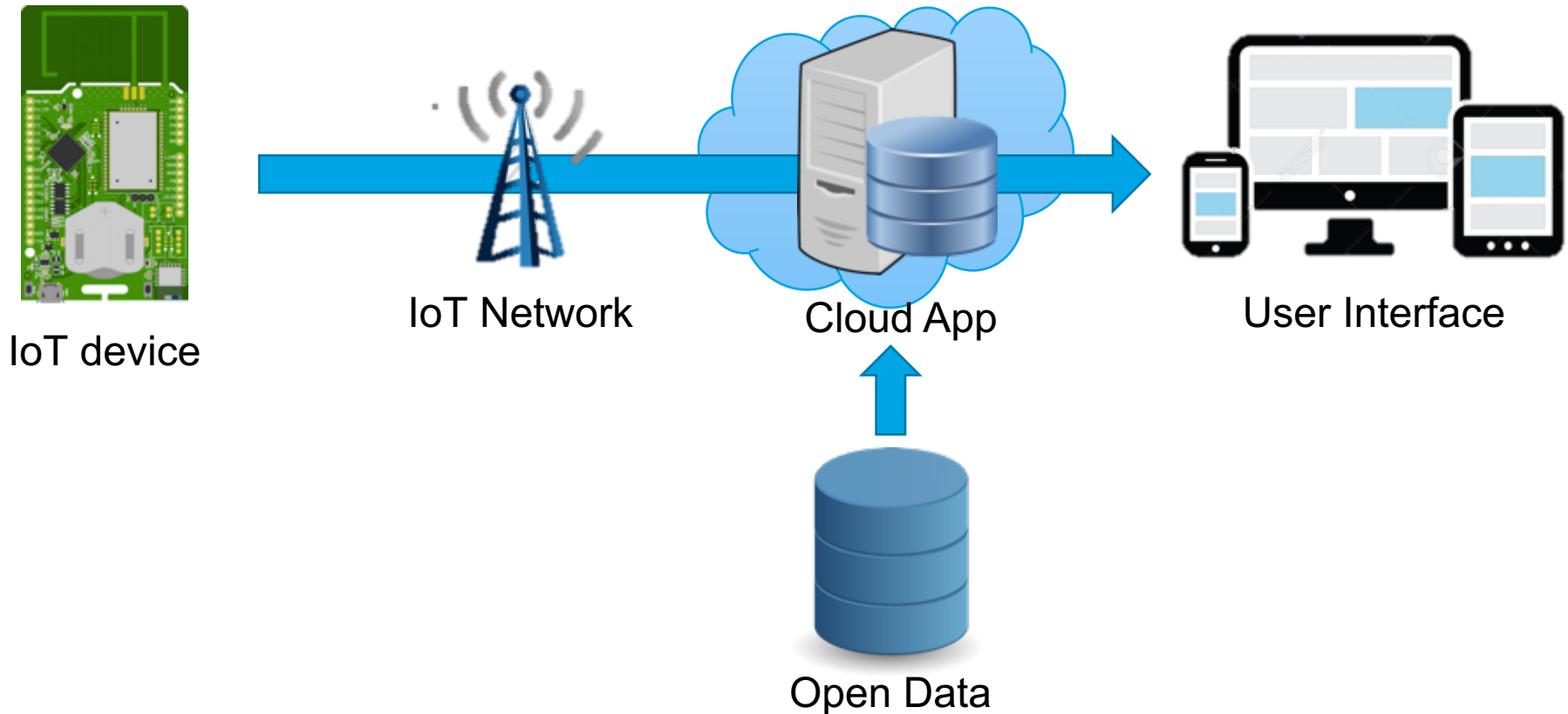


IoT-RAJAPINNAT

IoT

System architecture

Real-time data from the physical world, enriched with existing data.



LoRaWAN characteristics

LOW COST



LOW POWER



LONG RANGE



LOW SPEED



ROBUST



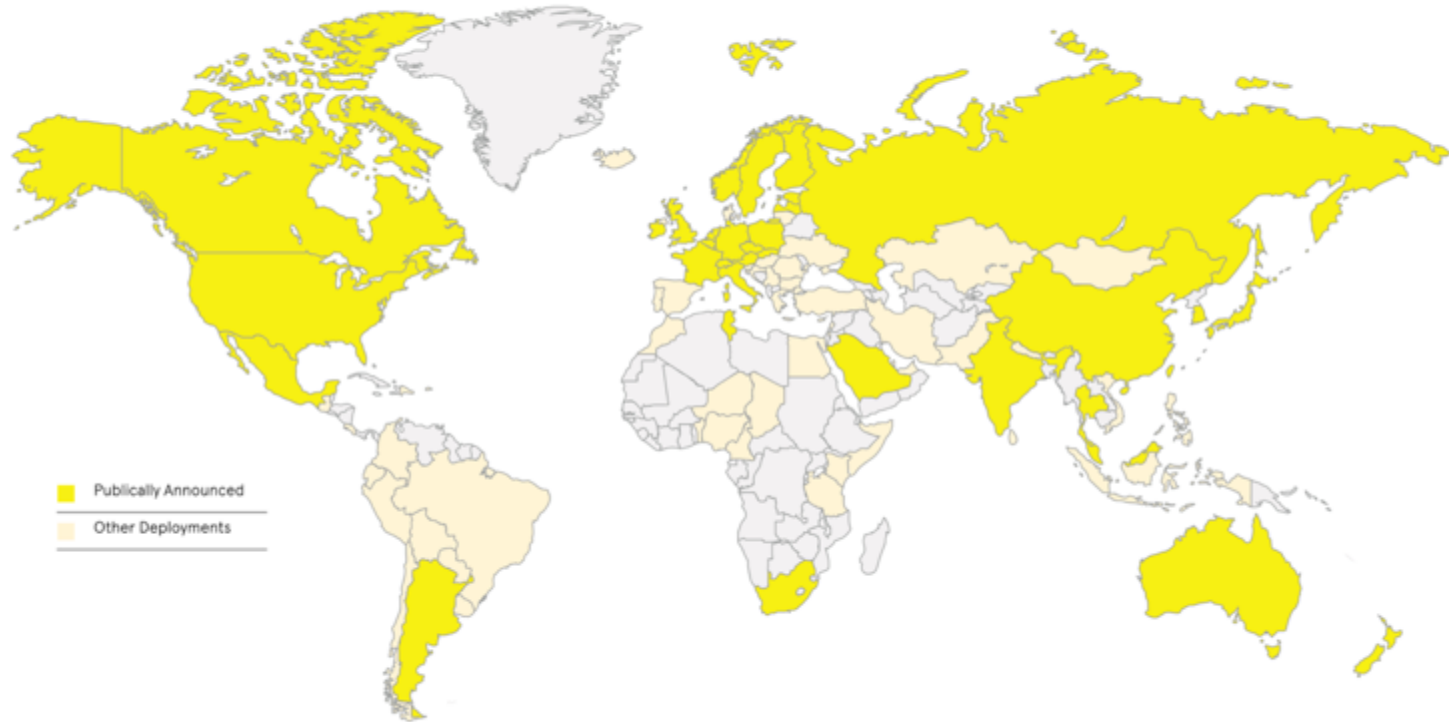
SECURE



Global networks

LoRaWAN™ Network Coverage

- 57 Announced Public Network Operators
- 49 Alliance Member Operators
- Over 100 Countries
- 350+ on-going trials & city deployments
- 500+ members in the Alliance



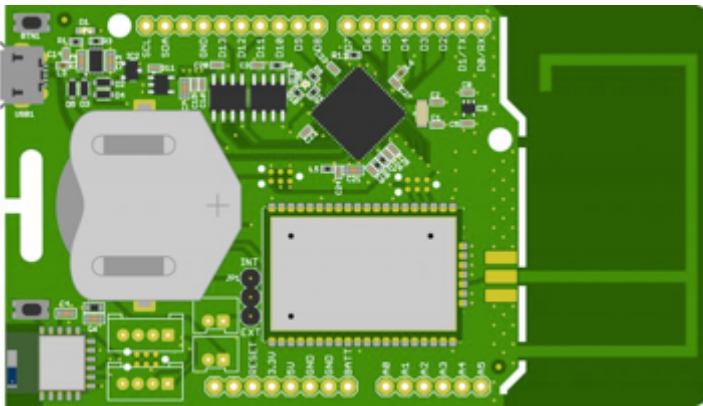
November 2017

All information contained herein is current at time of publishing – LoRa Alliance is not responsible for the accuracy of information presented



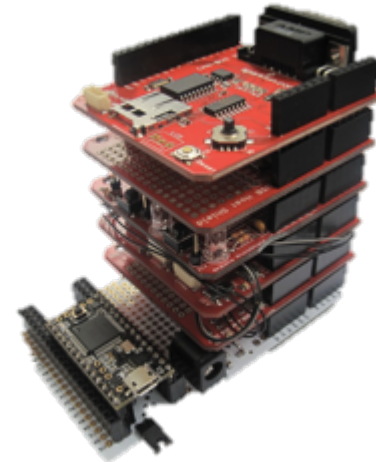
IoT Hardware

- LoRaWAN radio
- Integrated antenna
- Programmable processor (MCU)
- Flash memory
- USB interface
- Extension headers
- User LED & Button
- Temperature sensor
- Battery



Sodaq Explorer

Firmware development with
Arduino IDE C/C++



Sensor shields with
Arduino-compatible pin-headers

Bluemix cloud services

Compute

- Cloud Foundry Runtimes (D,L)
- Docker Containers
- OpenStack VMs

Networking

- Blockchain
- Load Balancer for Containers
- VPN

Storage

- Block Storage
- Object Storage

CDN & Media

- CDN

Privat APIs

- User Defined APIs
- User Defined Services

Watson

- AlchemyAPI
- Concept Expansion
- Concept Insights, Dialog
- Document Conversion
- Language Translation
- Natural Language Classifier
- Personality Insights
- Relationship Extraction
- Retrieve and Rank
- Speech To Text
- Text to Speech
- Tone Analyzer
- Trade Off Analytics
- Visual Recognition

DevOps

- Active Deploy
- Alert Notification
- Auto-Scaling (D,L)
- Delivery Pipeline
- Globalization Pipeline
- Monitoring and Analytics
- Tracking and Plan GIT

Data & Analytics

- Analytics for Apache Hadoop
- Analytics Exchange
- Apache Spark
- BigInsights for Apache Hadoop
- Cloudant NoSQL DB (D)
- dashDB (D)
- DataWorks, DataWorks Lift
- Elasticsearch by Compose
- Embeddable Reporting
- Geospatial Analytics
- IBM DB2 on Cloud
- IBM Graph
- Insights for Twitter
- Insights for Weather
- MongoDB by Compose
- PostgreSQL by Compose
- Predictive Analytics
- Redis by Compose
- SQL Database
- Streaming Analytics
- Time Series Database

Security

- Application Security on Cloud
- Application Security Manager
- Key Protect
- Network Security Groups for VMs
- Single Sign-On
- Vulnerability Advisor for Containers

Integrate

- API Connect
- Compose Enterprise
- Secure Gateway (D)
- Service Broker
- Service Discovery
- Service Proxy

IoT

- IoT Driver Insights
- IoT Foundation (D)
- IoT Map Insights
- IoT Real Time Insights

Application

- Application Server on Cloud
- Big Insights
- Business Rules
- Data Cache (D,L)
- Message Connect
- Message Hub
- MQ Light
- Session Cache (D,L)
- Workflow
- Workflow Scheduler

Mobile

- IBM Push Notifications
- Mobile Application Content Manager
- Mobile Application Security
- Mobile Client Access
- Mobile Data
- Mobile Quality Assurance
- Presence Insights

(D) Dedicated, (L) Local

Support – Coaching sessions



Date	Place	City
26.11.2017	Helsinki City Hall	Helsinki
7.12.2017	Etteplan	Espoo
14.12.2017	City of Vantaa	Vantaa
19.12.2017	IBM	Helsinki
Jan 2017	T.B.D.	Espoo
Jan 2017	T.B.D.	Helsinki

<http://www.etteplan.com/futurecitychallenge2018/support>



Etteplan