

Wing House

Smart Environment



Saint-Petersburg National Research University of
Information Technologies, Mechanics and Optics

Development of a distributed
semantic platform for Internet of
Things and Internet of Devices

S. Popov, D. Mouromtsev

Introduction

Market

- Looking to the future, Cisco IBSG predicts there will be 25 billion devices connected to the Internet by 2015 and 50 billion by 2020.

http://www.cisco.com/web/about/ac79/docs/innov/IoT_IBSG_0411FINAL.pdf

WORLD INTERNET USAGE AND POPULATION STATISTICS

<http://www.internetworldstats.com/stats.htm>

June 30, 2012						
World Regions	Population	Internet Users	Internet Users	Penetration	Growth	Users %
	(2012 Est.)	Dec. 31, 2000	Latest Data	(% Population)	2000-2012	of Table
WORLD TOTAL	7,017,846,922	360,985,492	2,405,518,376	34.3 %	566.4 %	100.0 %

Main goal

About Wing House project

Create database as a platform for
Internet Of Things

Analysis of current solutions

Develop high level architecture

Solutions

Analogs

cosm.com

idigi.com



Smart M3



Requirements

Tasks for Wing House project

- Be as flexible as possible, to allow easy connection of any device
 - Keep characteristic of devices
 - Keep stream data from devices
 - Have a simple protocol
- Be safe
 - Encryption of the data streams
 - Physical security of devices
 - Fault tolerant

Architecture

Database and hardware

- It was decided to use two databases
 - RDF
 - Stream
- We decided to make devices as simple as possible

Problems

RDF

- Access rights and Timestamps in RDF
- Big amount of data

Progress

Pilot project



Achievements

WingHouse



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Contacts

Smart Environment

WINGHOUSE.RU

+7 812 740 1239

support@winghouse.ru

St. Petersburg Birzhevaya Line, 14



wing
HOUSE

Sergey Popov

+7 921 747 5750

sp@winghouse.ru

Quattor
dimensionis

