Holistic solution for digital transformation In water utilities

New (4th) generation of SCADA system – much more than just a SCADA

Real time remote-control & data management

Smart, simple & affordable

By Ran Kedem – Partner at Reali Technologies Ltd, Israel.

About Reali Technologies Ltd.

Reali Technologies Ltd. is an Israeli leader and pioneer company in IIoT & cloud computing since 2008, the developer of **RealiteQ – real time remote control & data management**
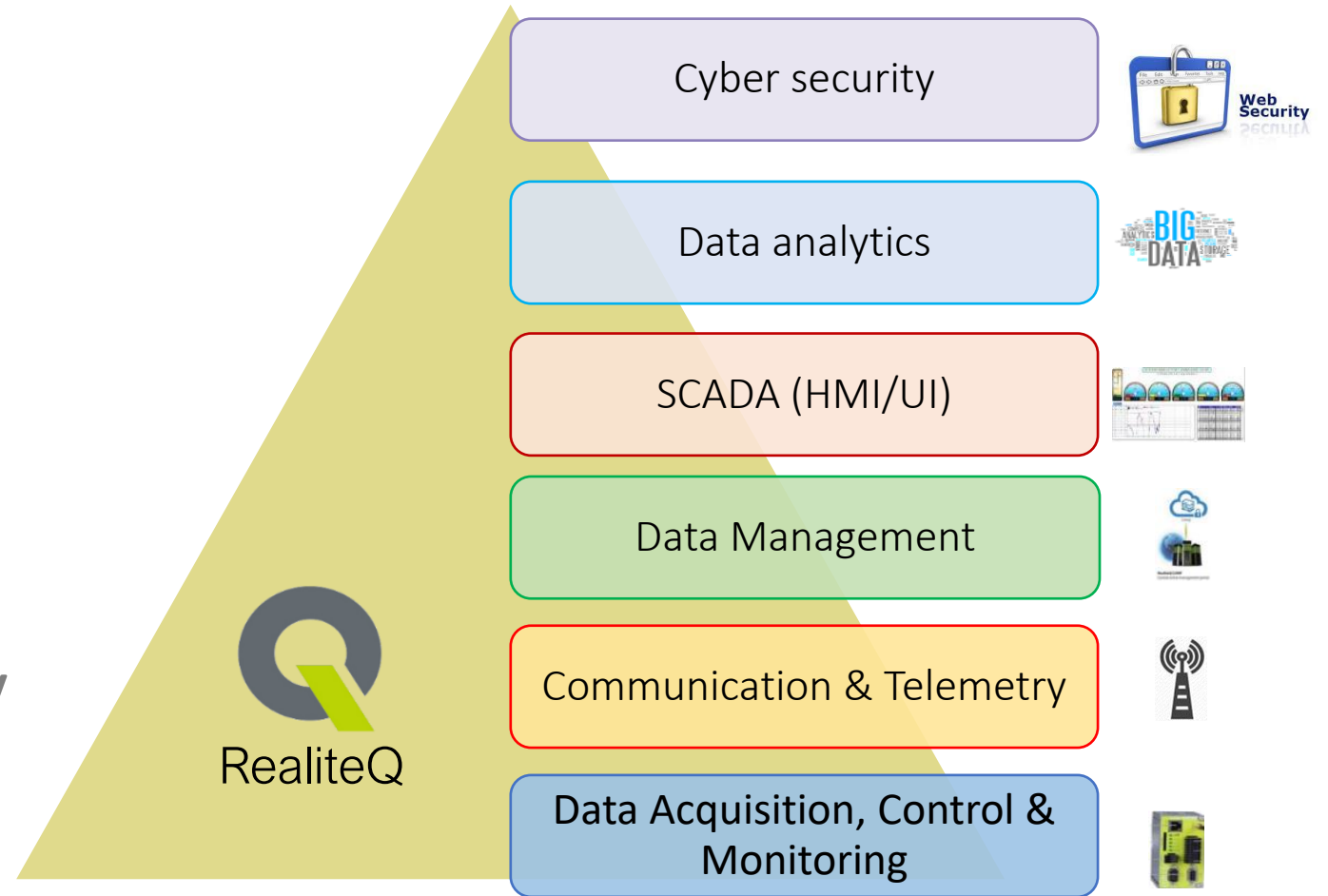
Today RealiteQ is a proven technology for wide range of applications, with installations in more than 40 countries in 5 continents including

Installations in Israel

Worldwide Installations
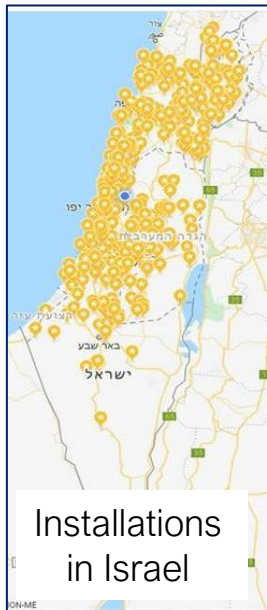
Water
Reservoir, Water treatment plant, Water tower
Desalination, Wells, Distribution System, River/Lake

Sanitation
Water treatment plant, Lift Station
Water Quality

Electricity
Grid monitoring, Genset control
Wind station, Solar station

Gas
Distribution system, Tank monitoring
PRS/ PRMS / City gate

BMS
Energy effeciency, Cooling tower, chillers

Industrial
Cooling towers, Factory Silos
Water treatment plant, Desalination

More
EV Charging, Vending machines, Irrigation
Water quality, Street light

Holistic (hardware & software) solution for real-time remote control & data management system from the infrastructure level through the ICT & SCADA level up to the Cybersecurity & data analytics level.

Cyber security

Data analytics

SCADA (HMI/UI)

Data Management

Communication & Telemetry

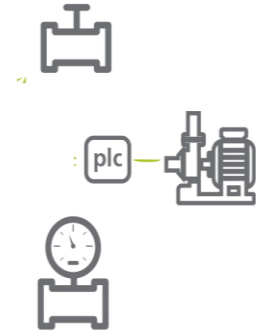Data Acquisition, Control & Monitoring

RealiteQ

Providing significant benefits along the main strategy operative dimensions: Costs, Quality, Speed , Reliability & Security

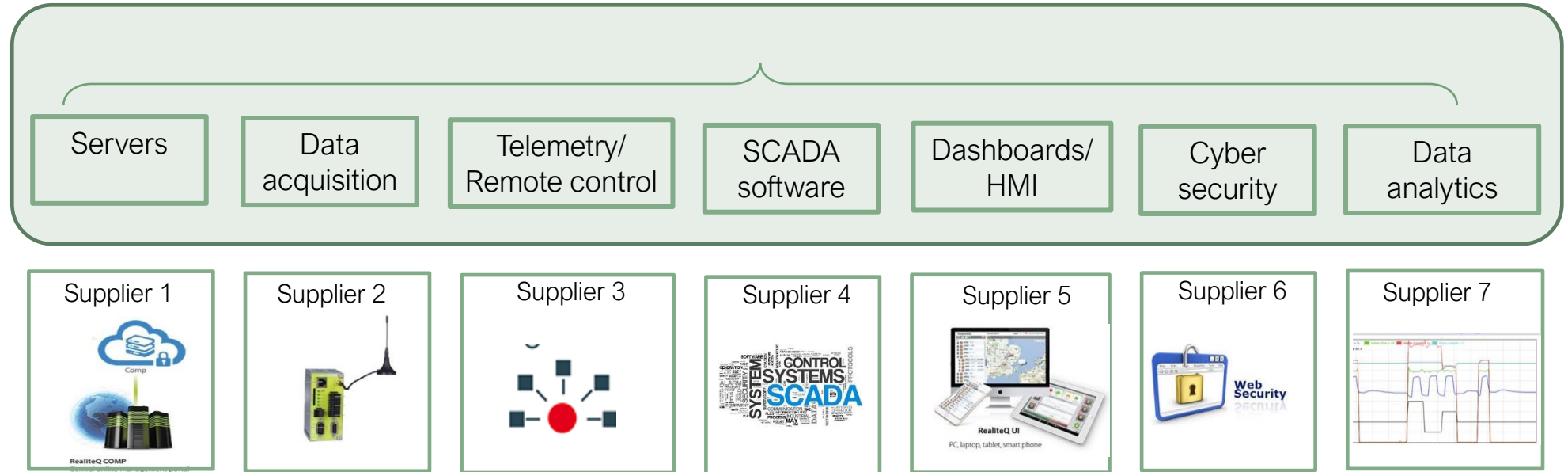# RealiteQ Holistic solution Vs. traditional solution

Holistic solution – One integrated solution

Site/ network

Servers	Data acquisition	Telemetry/ Remote control	SCADA software	Dashboards/ HMI	Cyber security	Data analytics

PLC analyzers sensors…

Supplier 1	Supplier 2	Supplier 3	Supplier 4	Supplier 5	Supplier 6	Supplier 7

Traditional solution – built of different technologies with limited interface between them which require long, complicated and expensive process of installation & maintenance
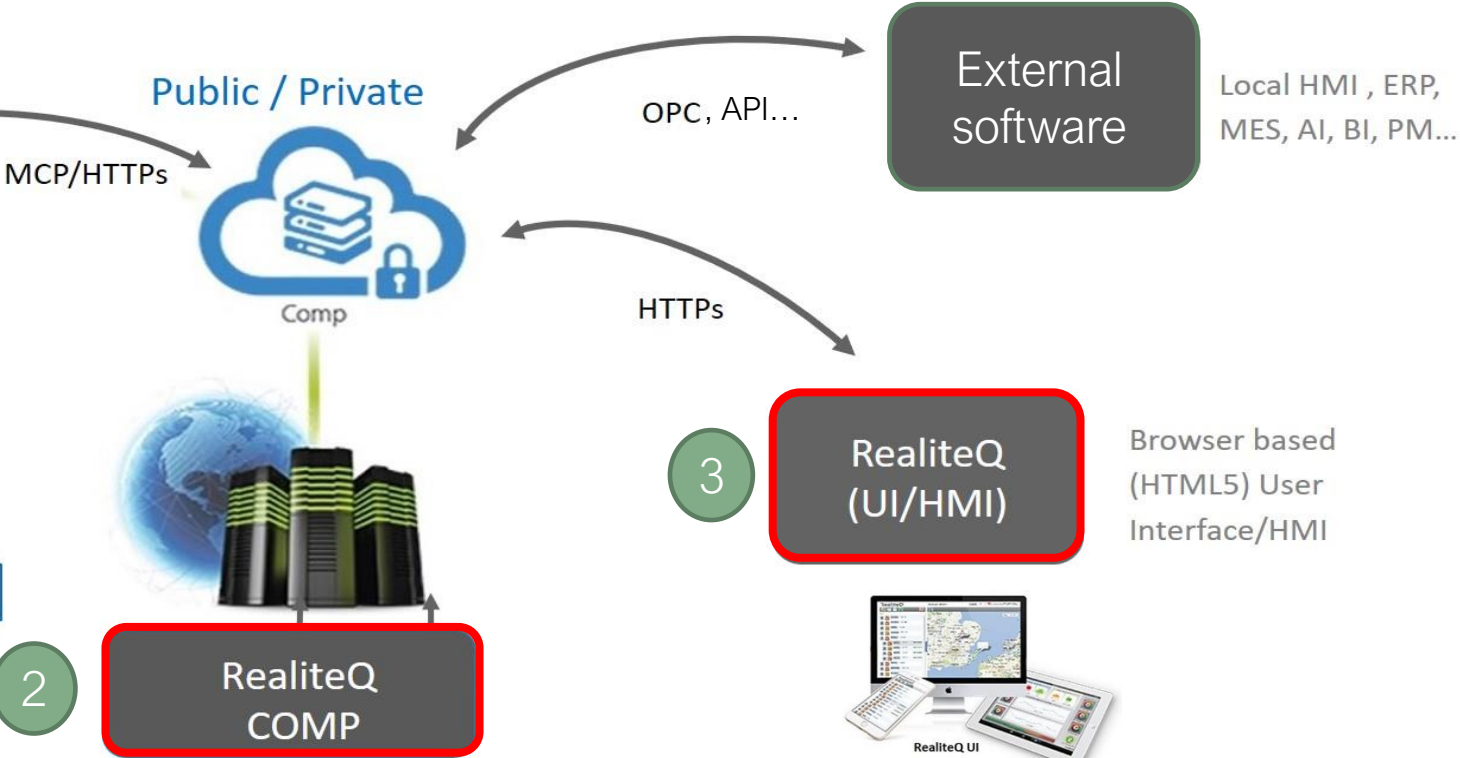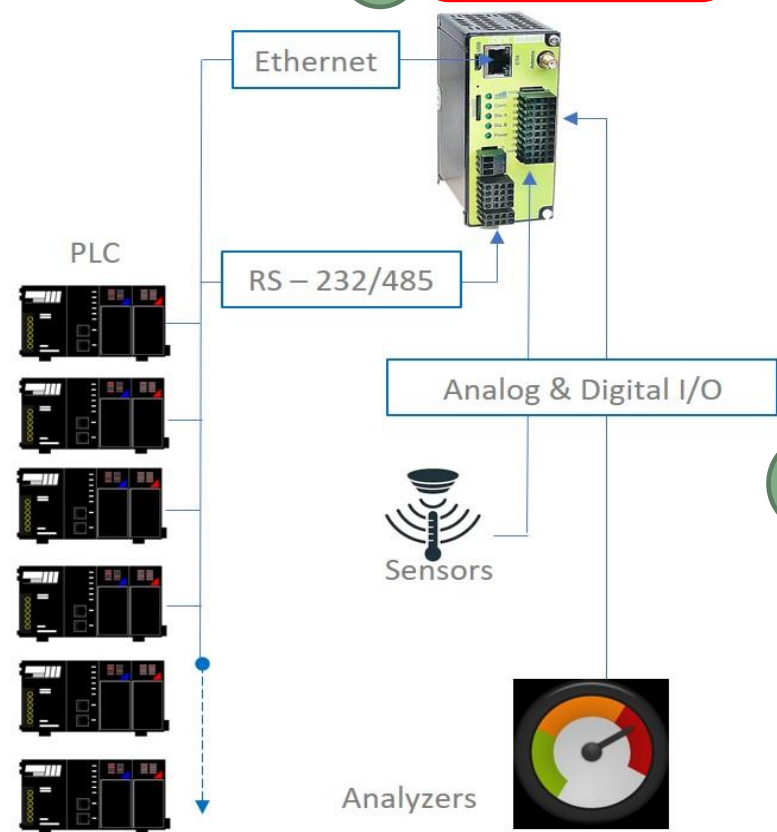
RealiteQ holistic solution for remote control & data management

Solution components – smart & Simple Only 3 components

ICEX - On site Data Producer. Explores sensors, analyzers, controllers etc. Support 3 different Protocols in parallel

1 Data Producer (Icex)

Ethernet

PLC

RS – 232/485

Analog & Digital I/O

Sensors

Analyzers

MCP/HTTPs

Public / Private

Comp

OPC, API...

HTTPs

External software

Local HMI , ERP, MES, AI, BI, PM...

3 RealiteQ (UI/HMI)

Browser based (HTML5) User Interface/HMI

RealiteQ UI
PC, laptop, tablet, smart phone

2 RealiteQ COMP

COMP - Central Online Management Portal
Mediates all communication, defines security and user permissions, manages the Historian, streams live data and sends Alarms notifications.

Any device is connected to the internet, anytime, anywhere.
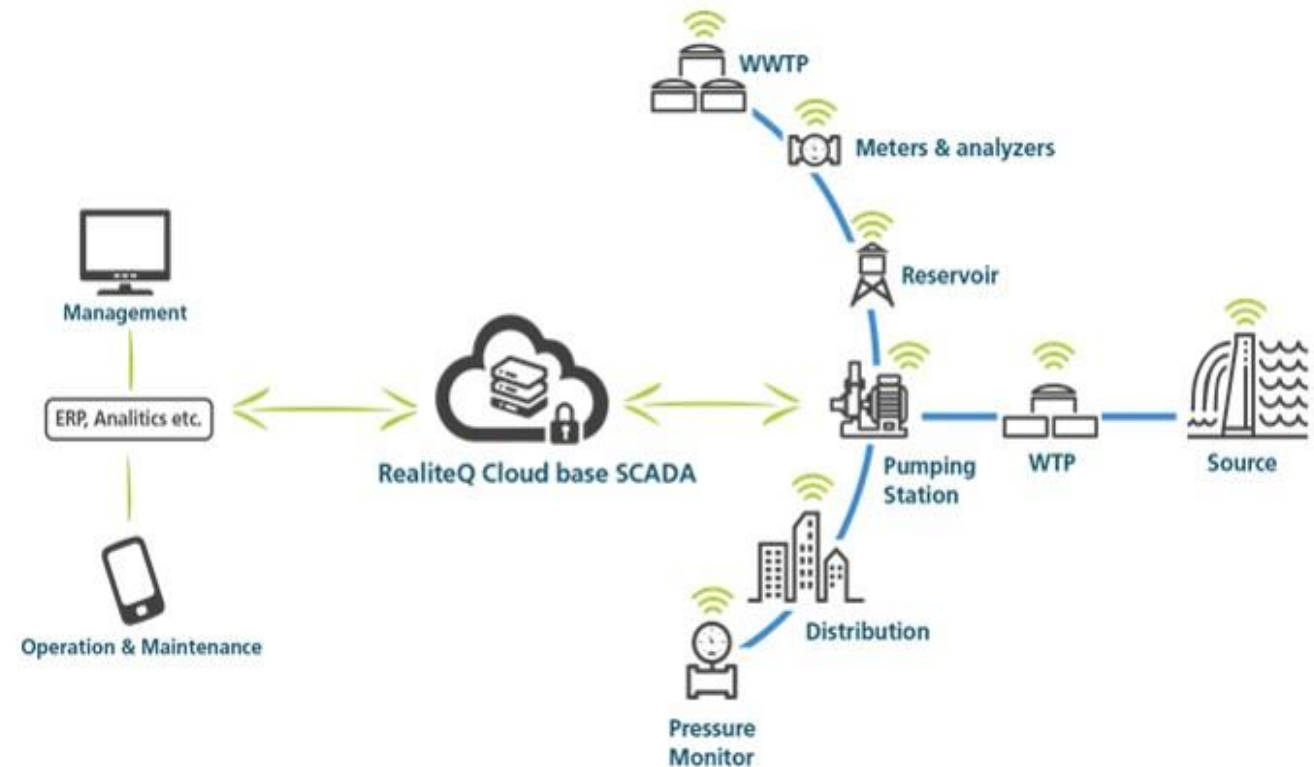
No limits of:

- Data
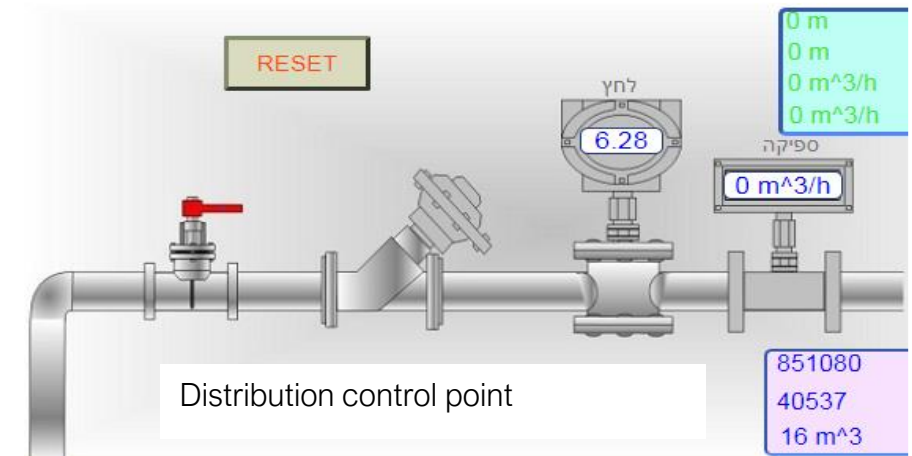
- users

- All kinds of Devices

- Sites/Locations

No limits to the distance between

sites or type of topography.

to the entire network (100% Modular)

Smart network - One management system for one water network

Built in Editor – customized BI & operational dashboards
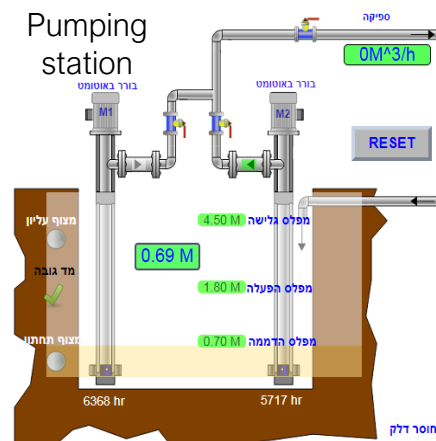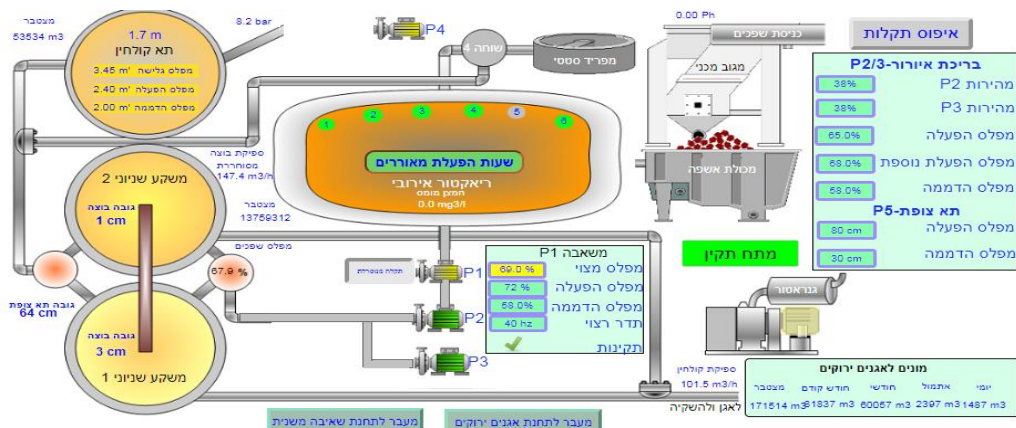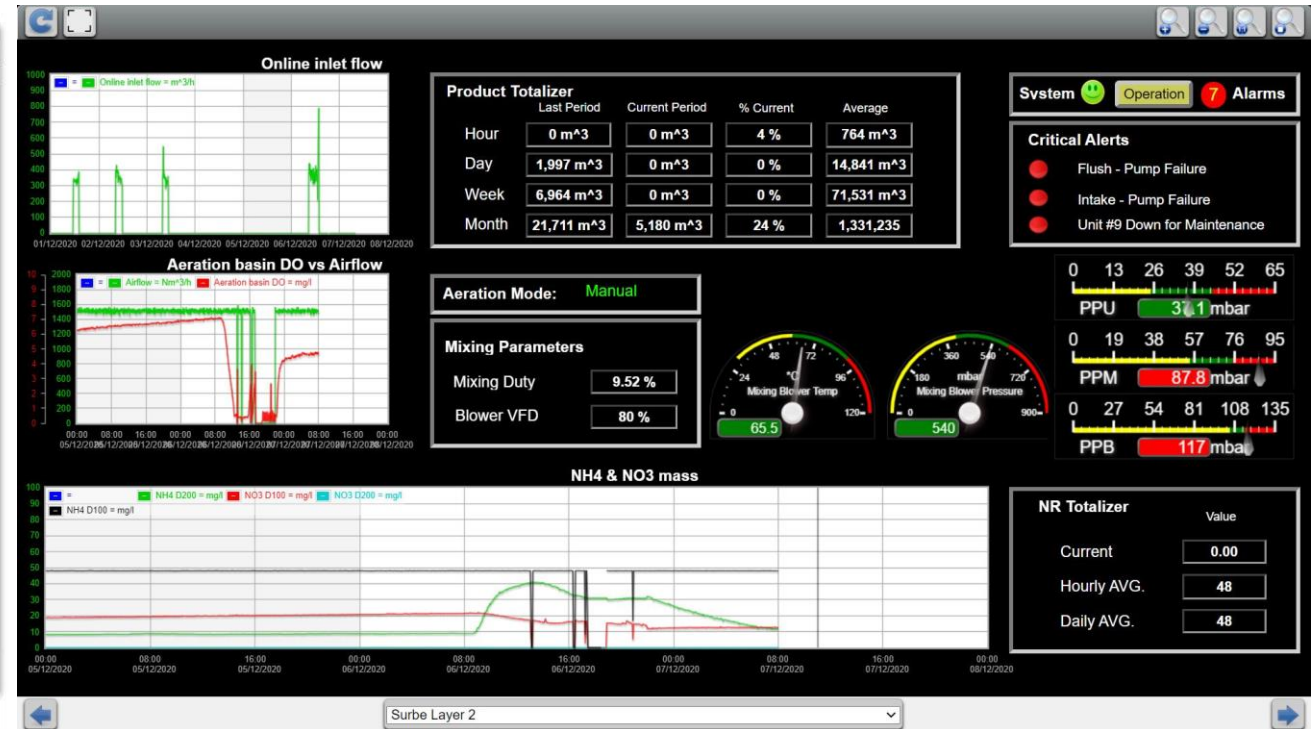
Wastewater Treatment plan operation screen

Pumping station

Distribution control point

REAL TIME "ASSET HEALTH" STATUS

ELIMINATE THE OPERATIONAL MOST COMMON RISKS:

- Risk of ignorance
- Risk of ignoring
- Risk of late response

Alert

No communication

OK
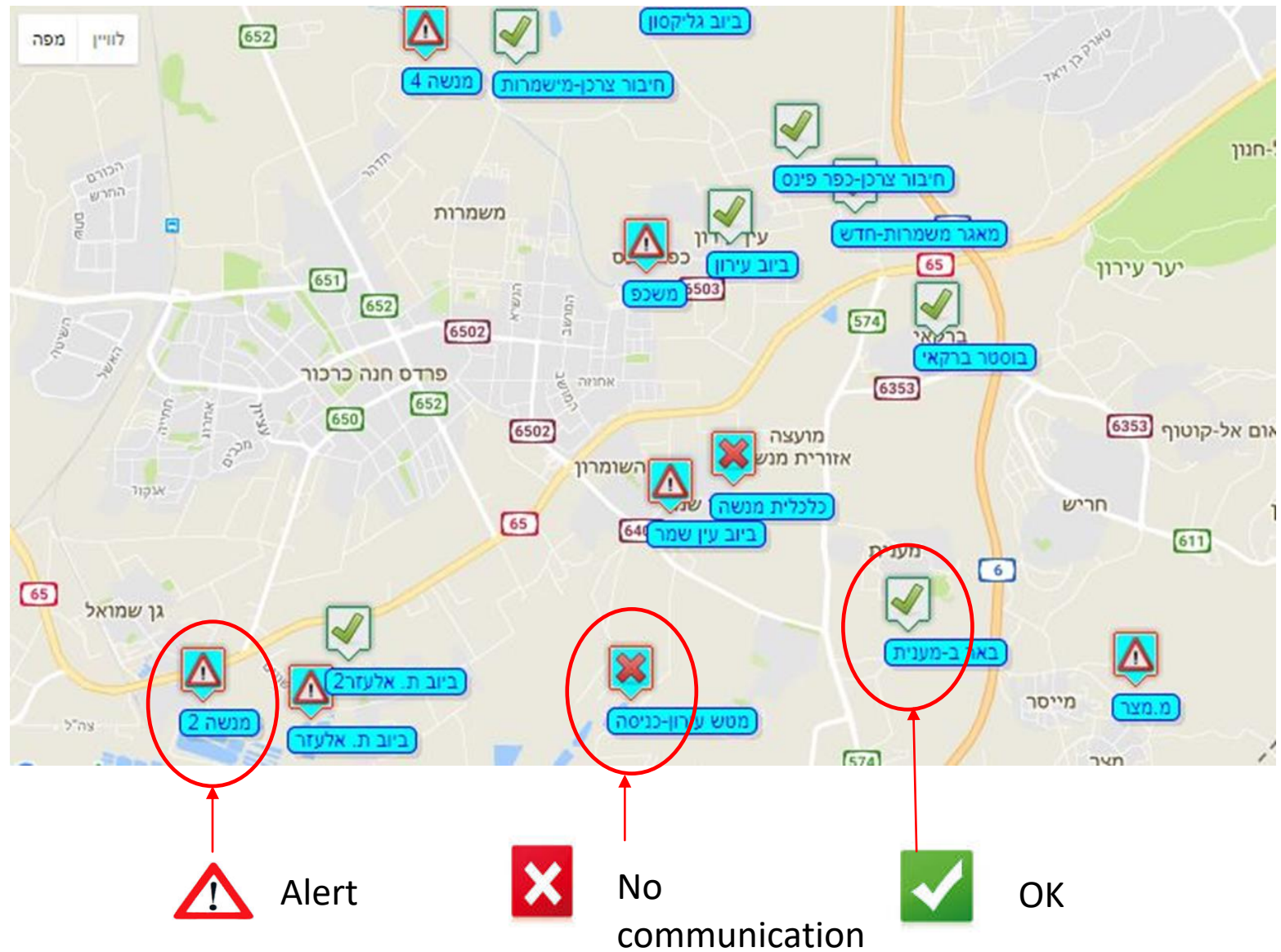
Hierarchical Organizational Structure for Corporates

National/corporate level	**Access to all sites, local or global**
State/Regional level	**Access to all regional sites**
Utility/costumer level	**Access to related sites**
Site level	**Access to single site**

AMERICAN WATER REGULATED OPERATIONS

California
Hawaii
Iowa
Illinois
Indiana
Michigan
Missouri
West Virginia
Virginia
Kentucky
Tennessee
Georgia
New York
Pennsylvania
New Jersey
Maryland

AMERICAN WATER

Improve Corporate governance

Smart alert management
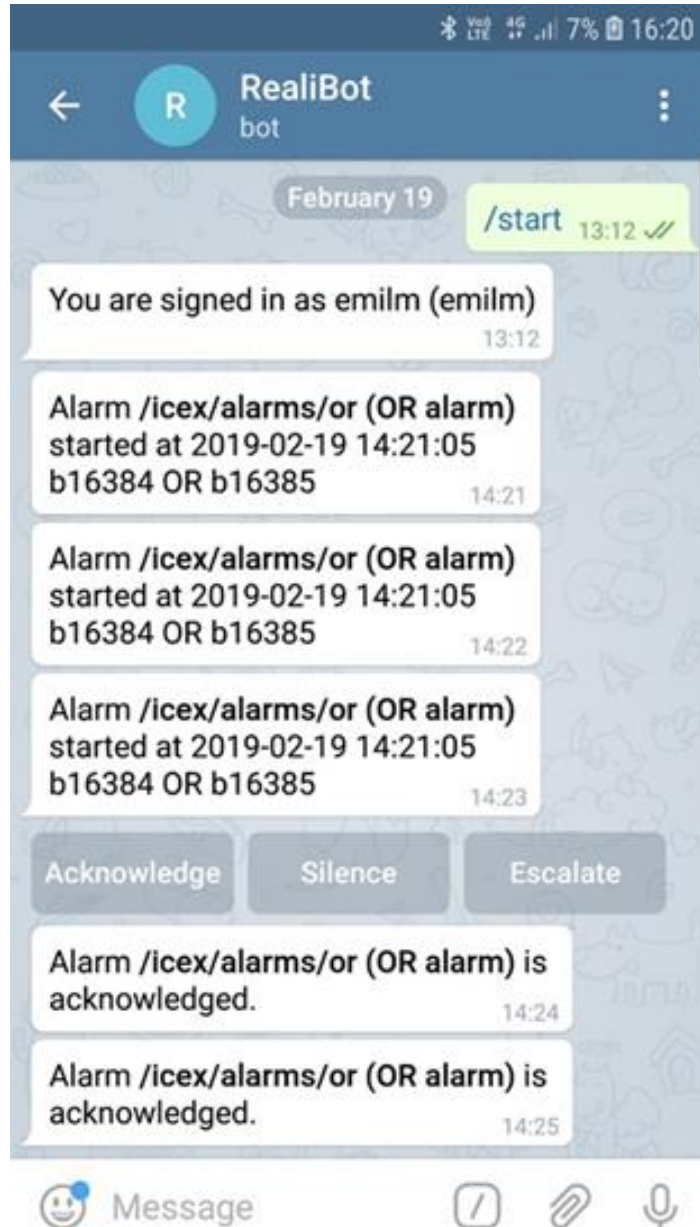
Cyber security - Built for Cyber

RealiBot
bot

February 19

/start 13:12

You are signed in as emilm (emilm)
13:12

Alarm /icex/alarms/or (OR alarm)
started at 2019-02-19 14:21:05
b16384 OR b16385
14:21

Alarm /icex/alarms/or (OR alarm)
started at 2019-02-19 14:21:05
b16384 OR b16385
14:22

Alarm /icex/alarms/or (OR alarm)
started at 2019-02-19 14:21:05
b16384 OR b16385
14:23

| Acknowledge | Silence | Escalate |

Alarm /icex/alarms/or (OR alarm) is
acknowledged.
14:24

Alarm /icex/alarms/or (OR alarm) is
acknowledged.
14:25

Message

Analyzers

Sensors

PLC

SSH/SSL

RealiteQ comp

HTTP/HTTPS

HTTP/HTTPS

Client Network

Amazon Cloud server (AWS)

Client Authorized users

WATER AUTHORITY
Water Security Unit

STATE OF ISRAEL

25 February 2020–04–07

To whom it may concern:

Dear Ms./Sirs

Re: Software and End Units of REALITEQ Adaptation to the Cyber Protection Procedure

Per request of the supplier, ICEX end units and software of the REALITEQ company were examined by the Governmental water and sewage authority and our consultant teams.

I hereby confirm that the software and end units in fact comply with the requirements, according to the cyber protection procedure of the water authority.

The Challenge:

- limited corporate governance

- **Only basic data analytics and reports were made manually**

- Poor maintenance and service level with high OPEX

- **Late response for critical events** (overflow…) Cusses for large damages and costs in different remote sites

The Results:

- Increase in Operational safety

- **Service without interruption**

- Significant savings of water (~50%)

- **Significant savings of electrical power (~50 %)**
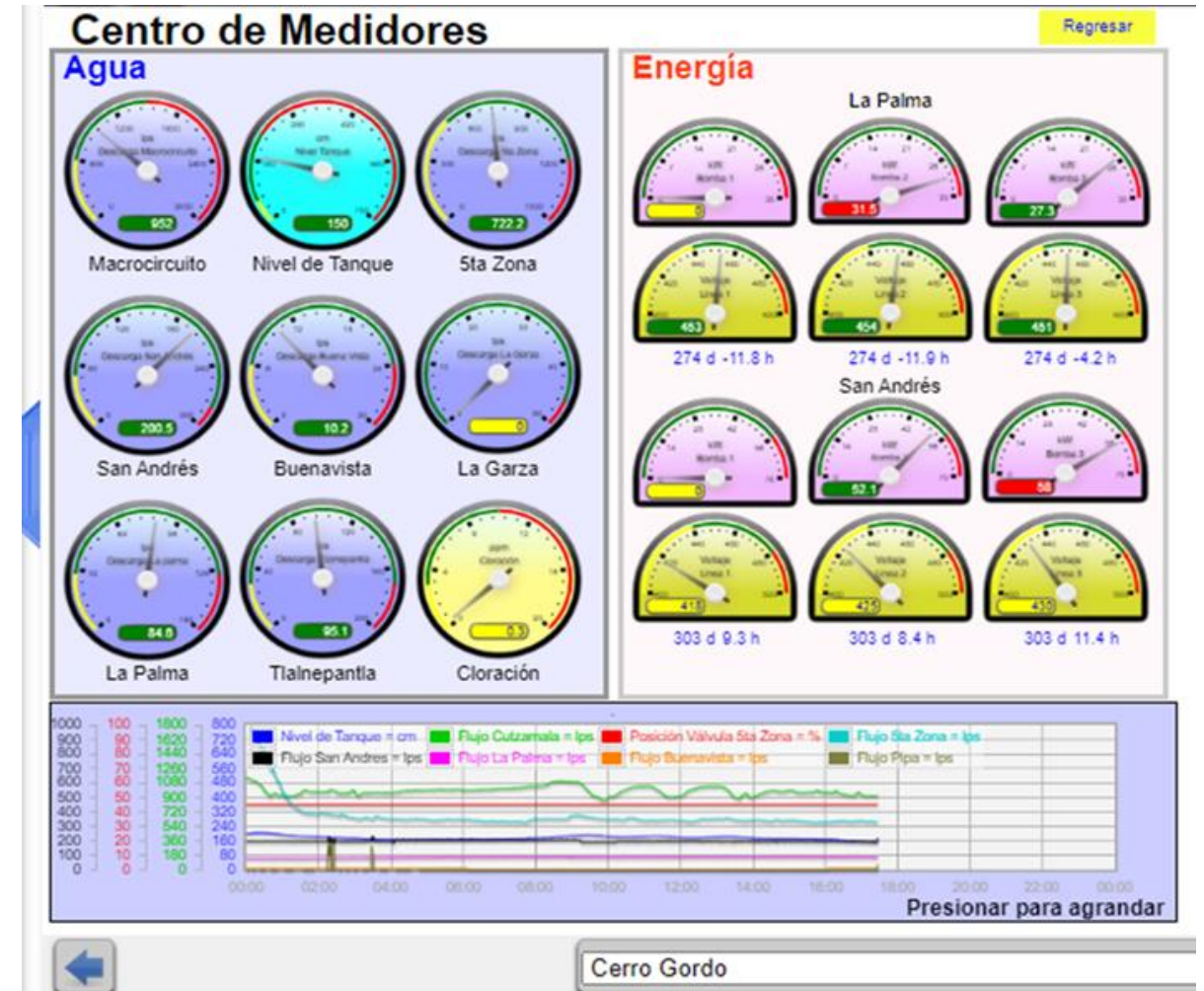
The Extension: As for the success of the project, the project was expended to 20 sites and the plan is to connect all the network sites to RealiteQ (installation stopped as for the COVID-19).

Summary of benefits

RealiteQ Benefits

- Simple fast and undistributed installation

- Maintenance free and easy to use

- No need for special IT capabilities, manpower or infrastructure

- 100% modular, Interfacing with existing equipment & software

RealiteQ Improves:

- Real-time routine & crisis events management capabilities

- Operational optimization

- Corporate governance

EFFICIENCY   QUALITY   COSTS

Affordable & accessible also to Small/rural utilities

For more information, please contact:

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