

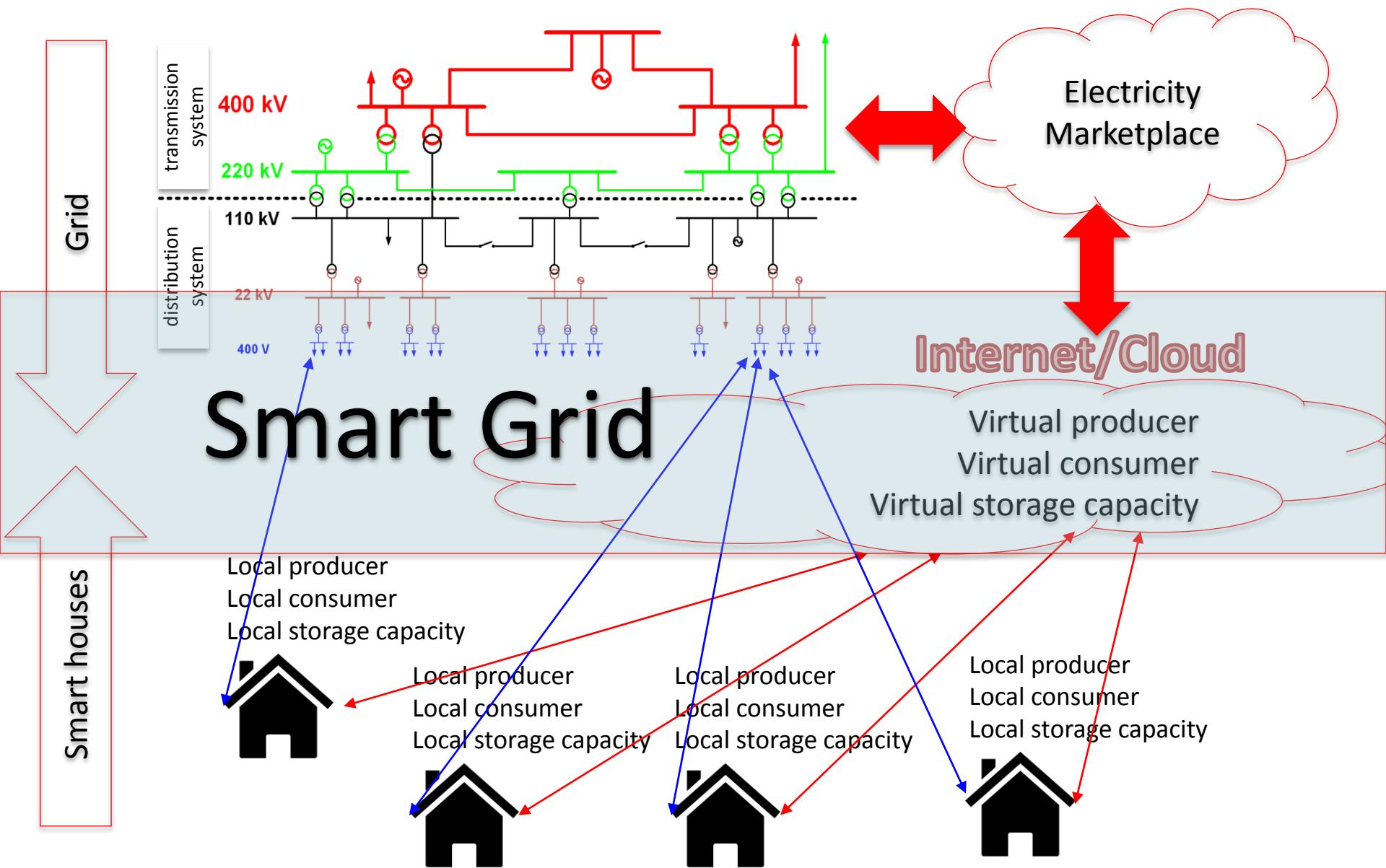
Tecomat Foxtrot - basic node of Smart Grid

Meeting of the Chairpersons
of the Economic Affairs Committees on Energy Union

Bratislava
2. December 2016

Ing. Jaromír Klaban

How to build the Smart Grid from bottom?



Teco:

- name of the company since 1993, with history of predecessors since 1919

V. Pechal

1919-1929



1929-1945



1945-1993



1993-2013

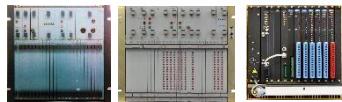


Advanced Automation

New logo: 2013-2016

Tecomat:

- family name of controllers with 40 years of experience since 1976



NS-910
1976



NS-915
1980



NS-905
1983



NS-940
1989



NS-950
1992



NS-946
1994



TC-600
1997



TC-650
2005



TC-700
2003-2016



Foxtrot
2007-2016



Foxtrot:

first name of youngest Tecomat

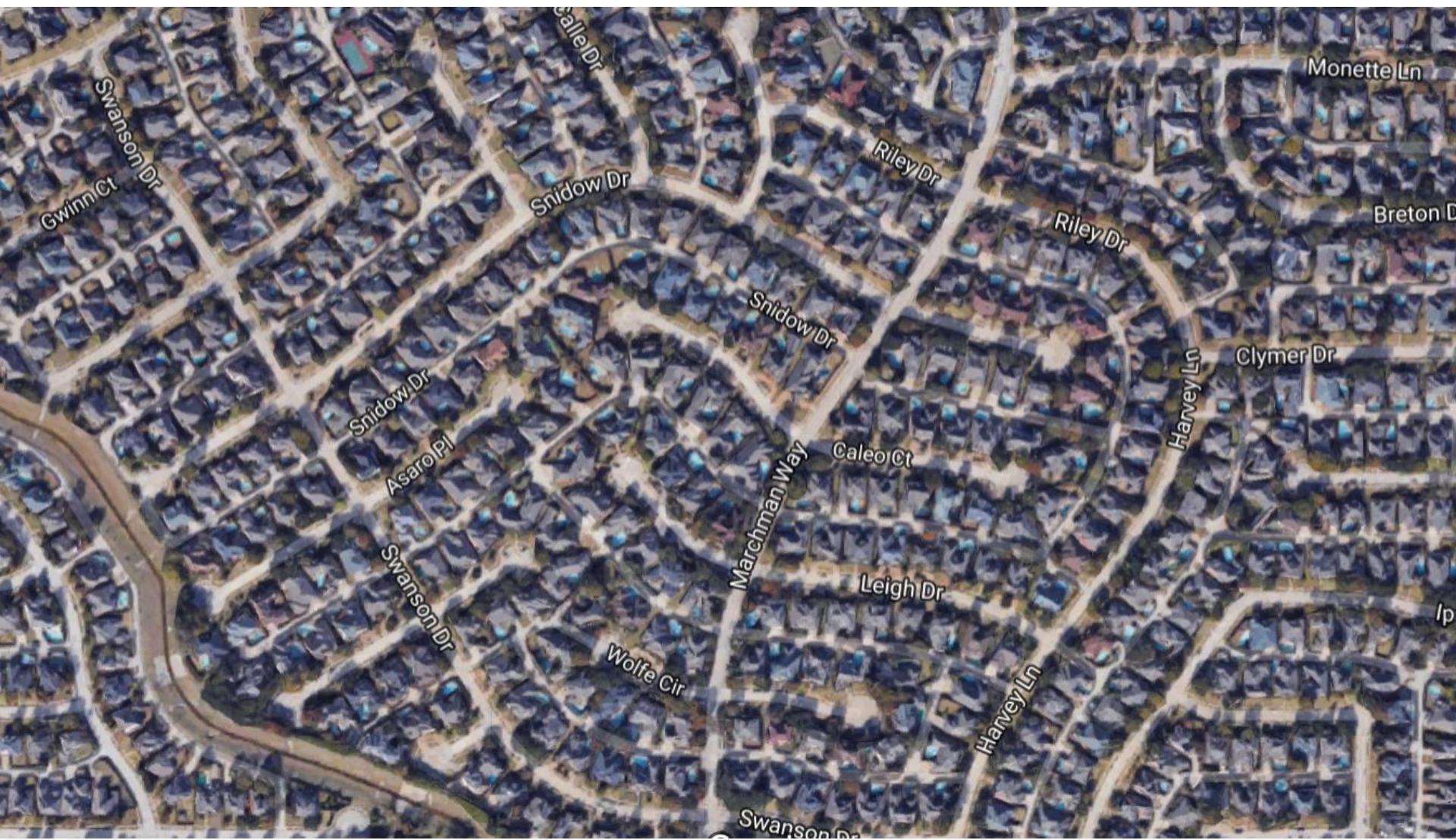
- Well matured since 2007
- Smallest, most powerful



Utilities see
the grid as whole system



Utilities see areas of house, which
should/could be controlled from the center as group



In Teco we see individual house
with individual preferences





The image shows a screenshot of a smart home control application interface. On the left, there's a sidebar with the title "Natura SPACE" and a house icon. Below it is a navigation menu with the following items:

- Přehled
- Obývací pokoj
- Koupelna
- Ložnice

Below these are several other options: Vytápění, Větrání, Osvětlení, Stínění, Spotřeba, and Předvolby. At the bottom of the sidebar are icons for temperature (5 °C), sun (17), lux (LUX), and NT.

The main area displays a floor plan of a house. The plan includes a living room, a bathroom, a bedroom, and a kitchen. Various icons are placed throughout the rooms, representing different smart home features:

- Lightbulbs: Representing lighting control.
- Wavy lines: Representing temperature or heat control.
- Fan icons: Representing ventilation control.
- A window icon with a cross: Representing window control.
- A small device icon: Representing a central control unit or sensor.

The floor plan also shows the physical layout of the house, including walls and doors.

Our Foxtrots controls also luxury houses



Foxtrot is controller for all electric installations and devices



Foxtrot can see and control the house as electricity consumer



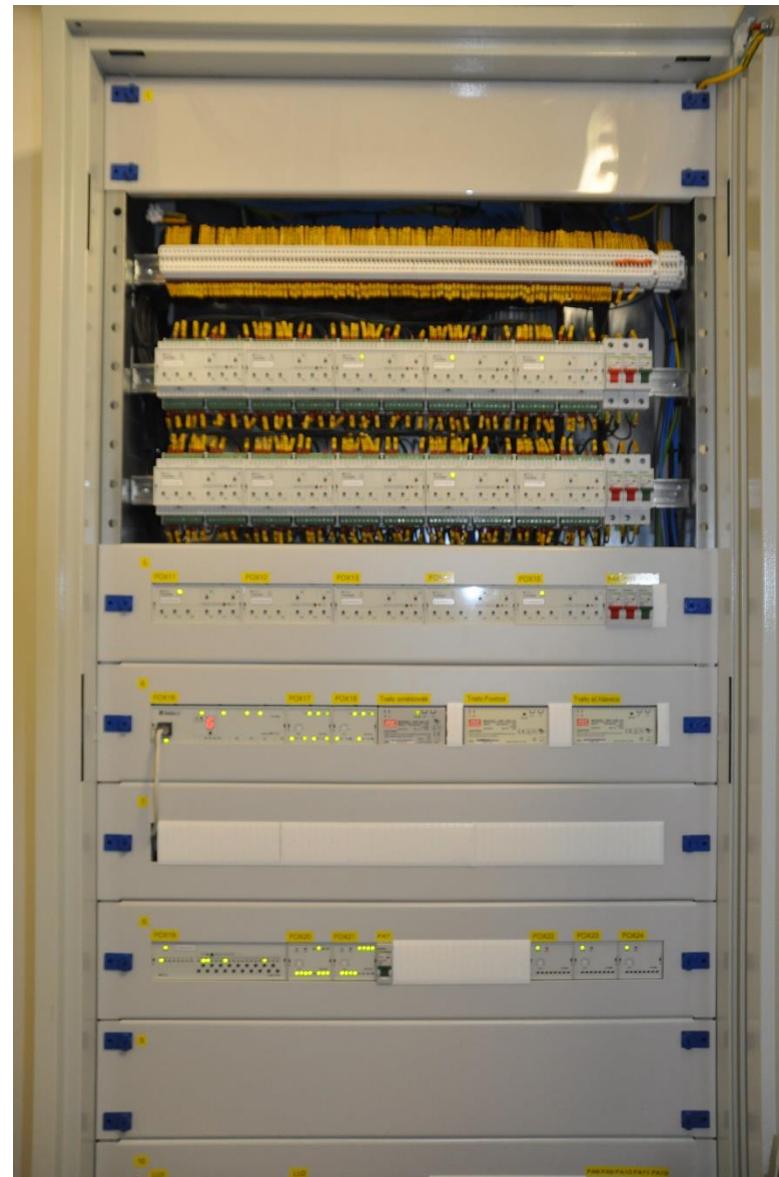
Foxtrot can see and control the house
as electricity producer



Foxtrot can see and control the house
with accumulation capacity in batteries

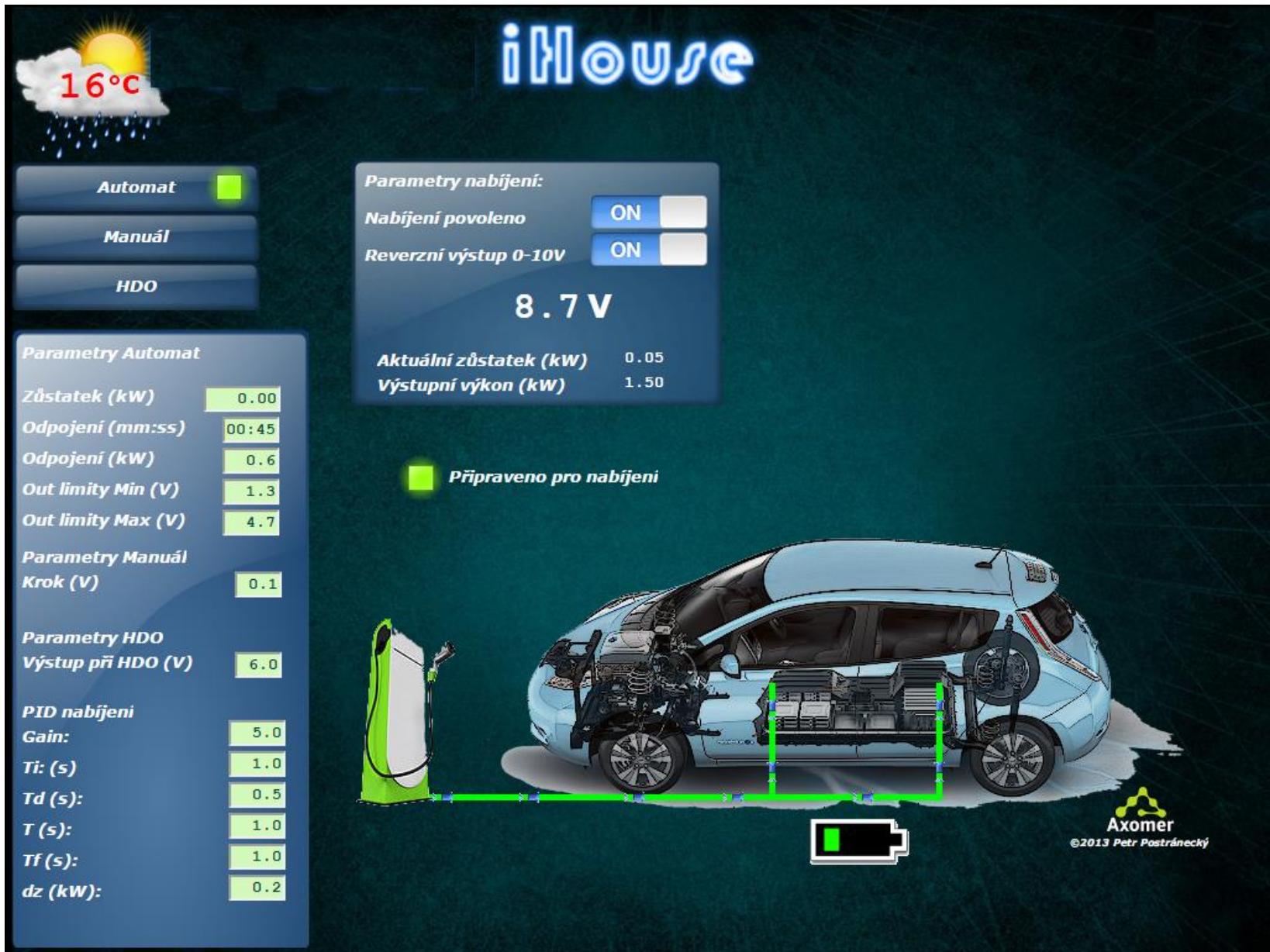


Foxtrot can see and control the house with accumulation capacity in hot water tanks



Foxtrot can see and control the house with accumulation capacity in electro vehicles

iHouse



Parametry nabíjení:

- Nabíjení povolené: ON
- Reverzní výstup 0-10V: ON

Aktuální zůstatek (kW): 0.05

Výstupní výkon (kW): 1.50

8.7 V

Připraveno pro nabíjení

Parametry Automat

Zůstatek (kW)	0.00
Odpolení (mm:ss)	00:45
Odpolení (kW)	0.6
Out limity Min (V)	1.3
Out limity Max (V)	4.7

Parametry Manuál

Krok (V)	0.1
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Parametry HDO

Výstup při HDO (V)	6.0
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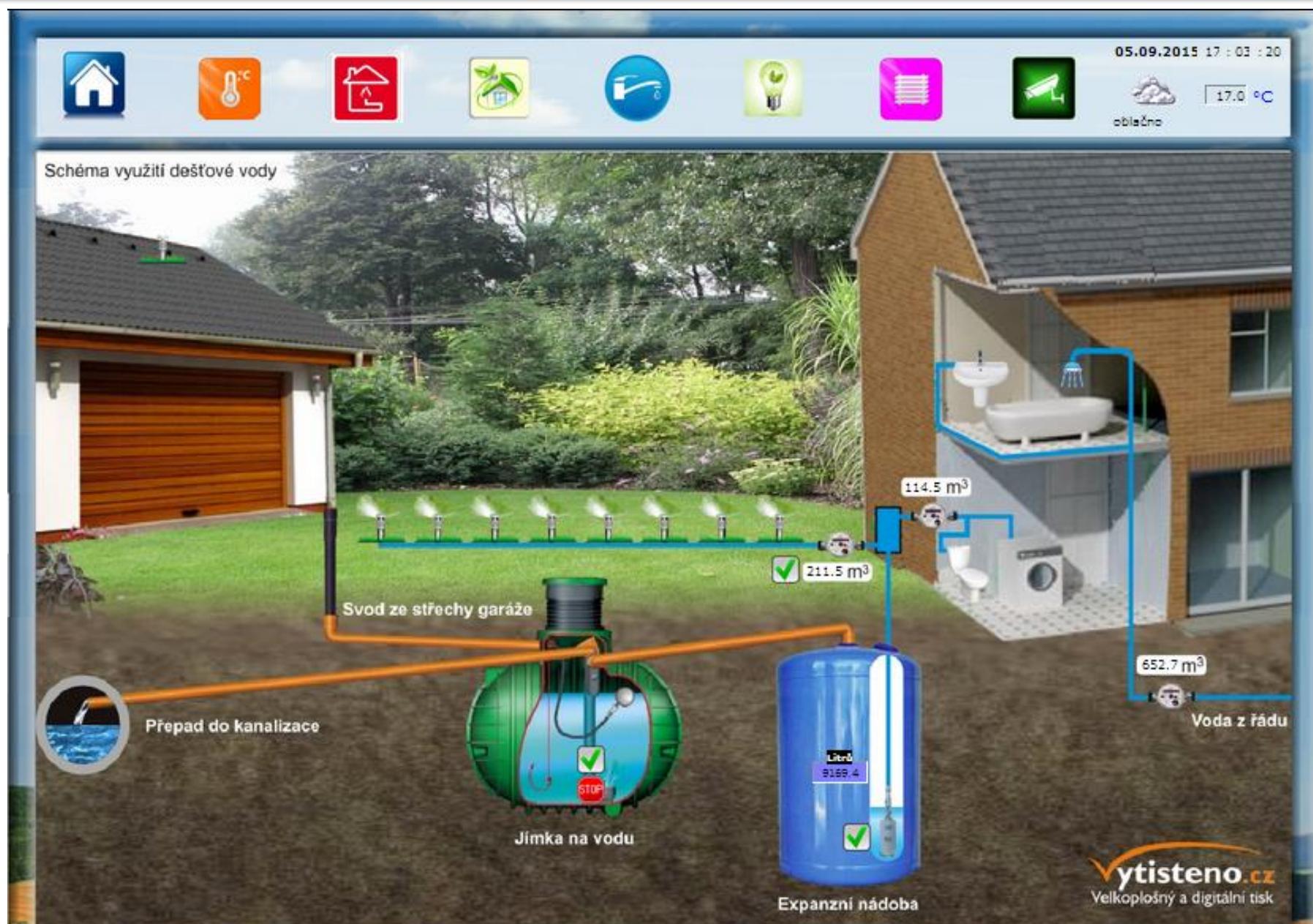
PID nabíjení

Gain: 5.0

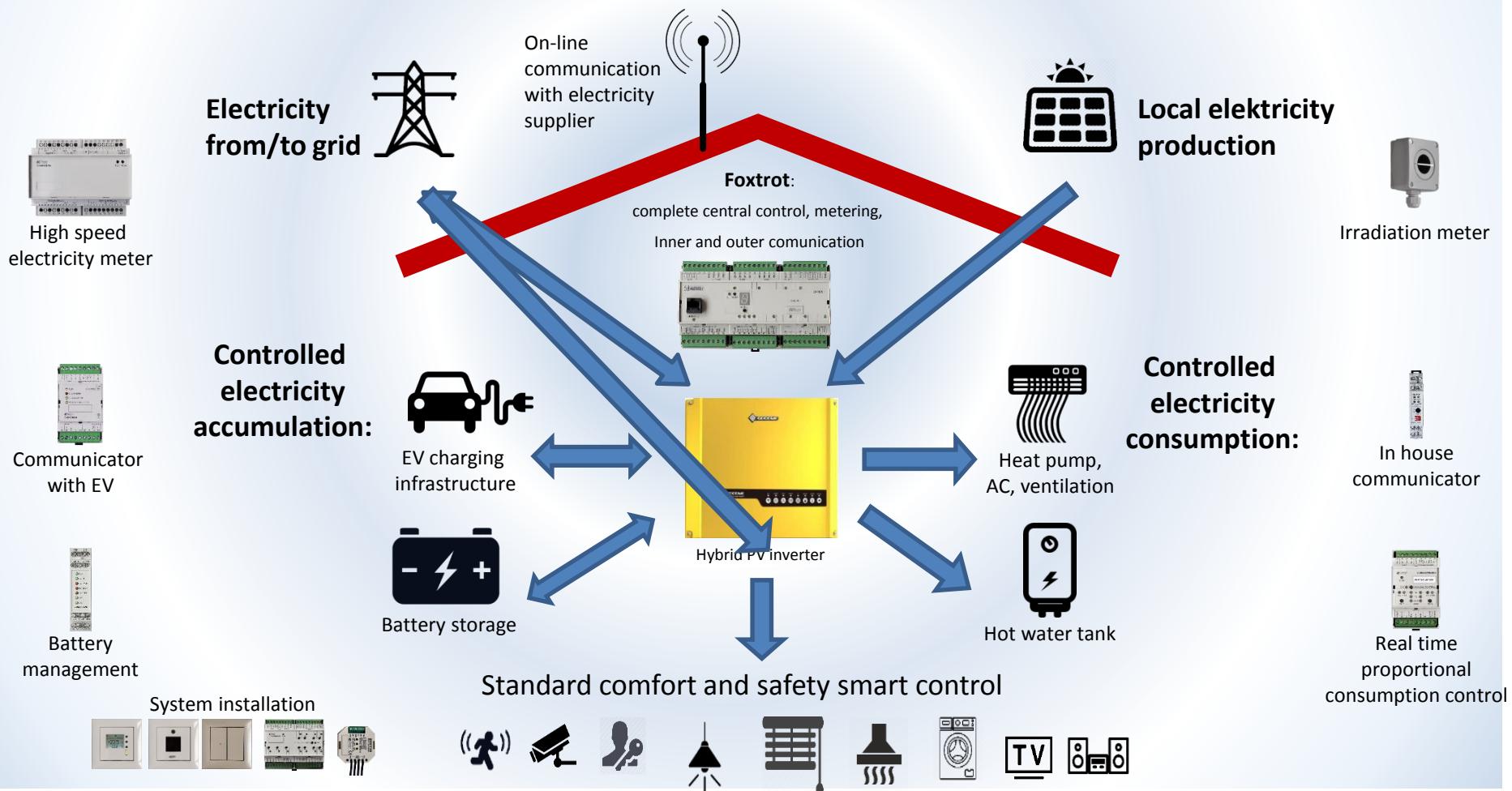
Ti (s):	1.0
Td (s):	0.5
T (s):	1.0
Tf (s):	1.0
dz (kW):	0.2

Axomer
©2013 Petr Postránecký

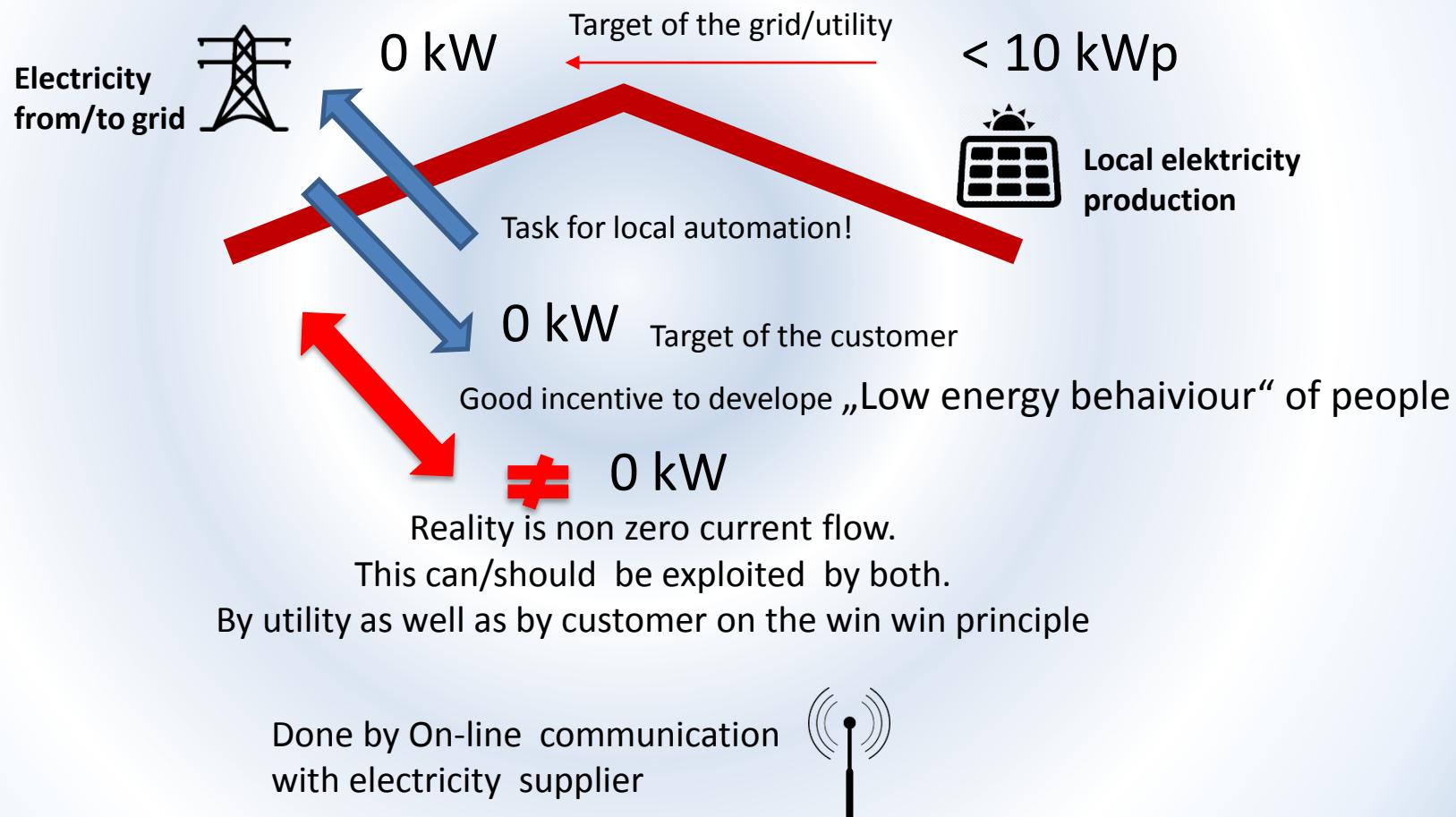
Foxtrot can see and control the house with accumulation capacity of grey and rain water



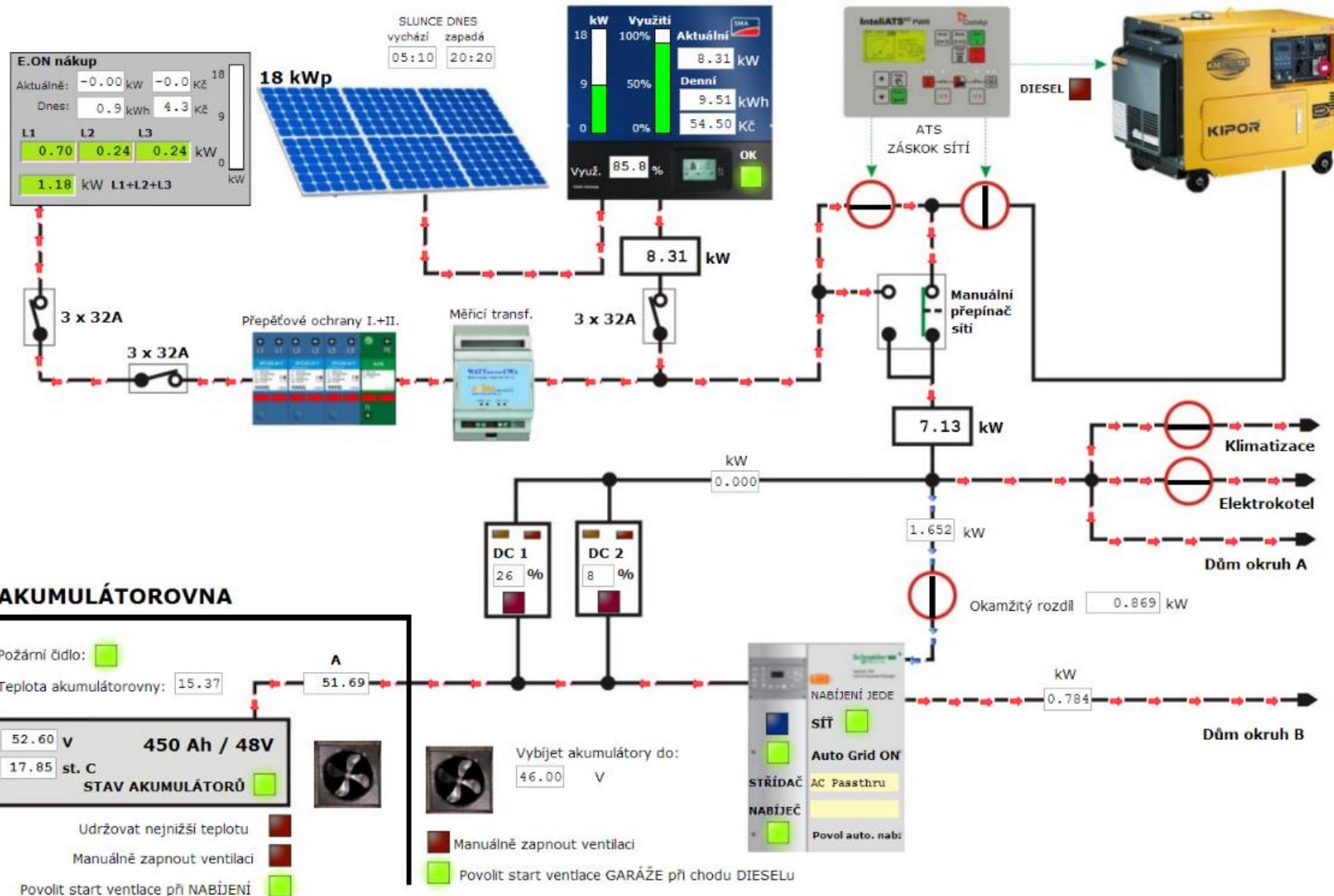
Each house with Foxtrot is „Smart Grid Ready Prosumer“

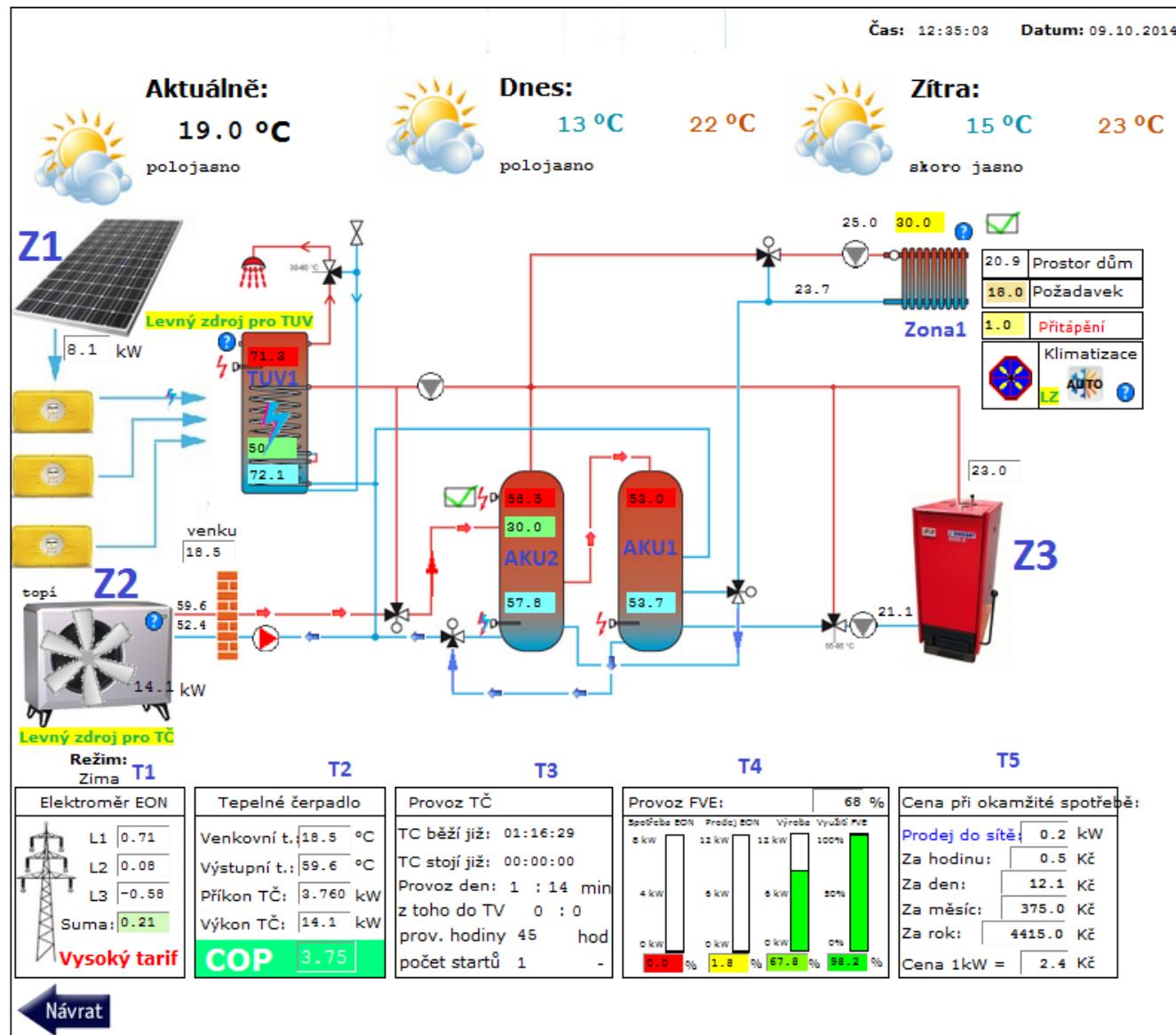


Each house with Foxtrot is „Smart Grid Ready Prosumer“

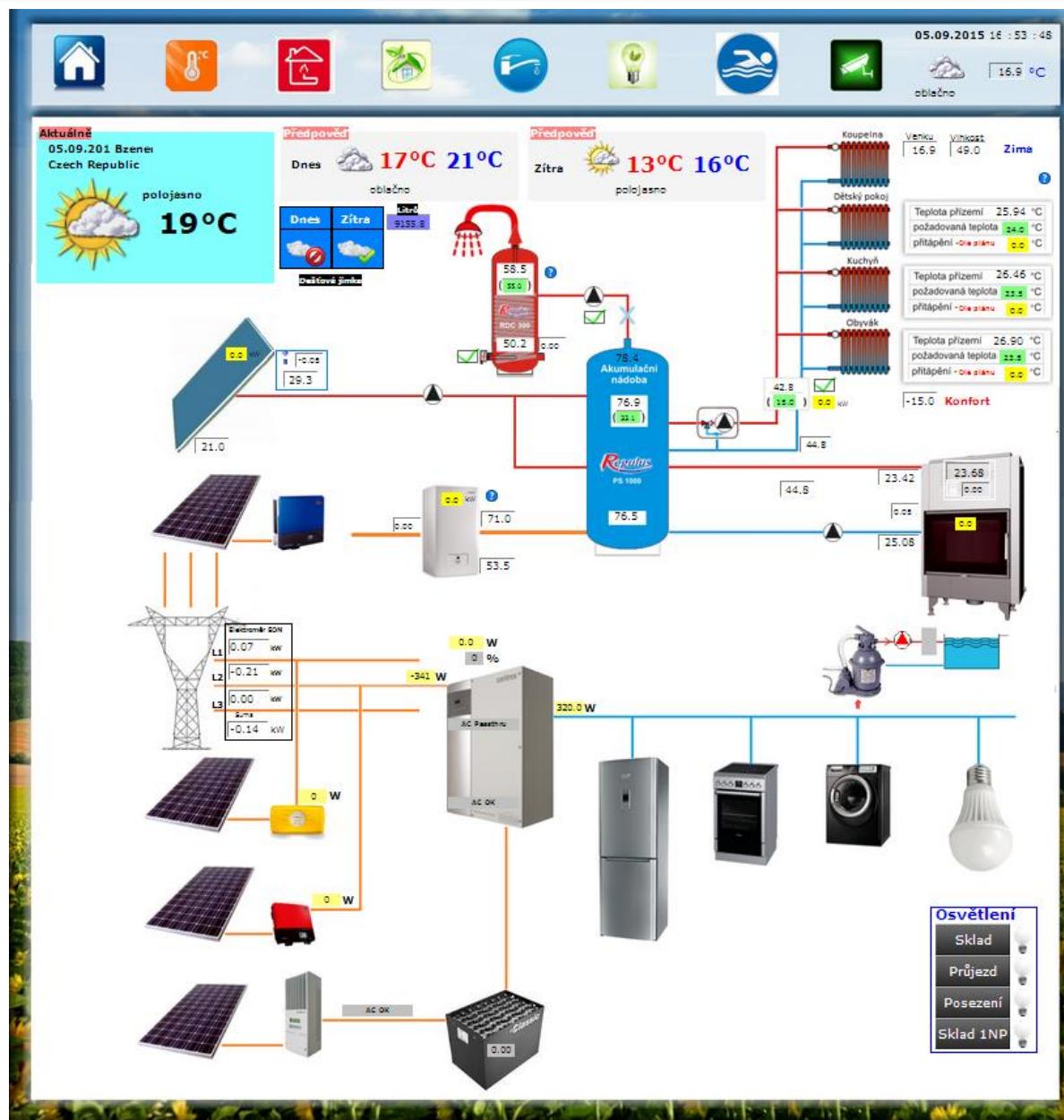


Foxtrot based family house in E.ON area



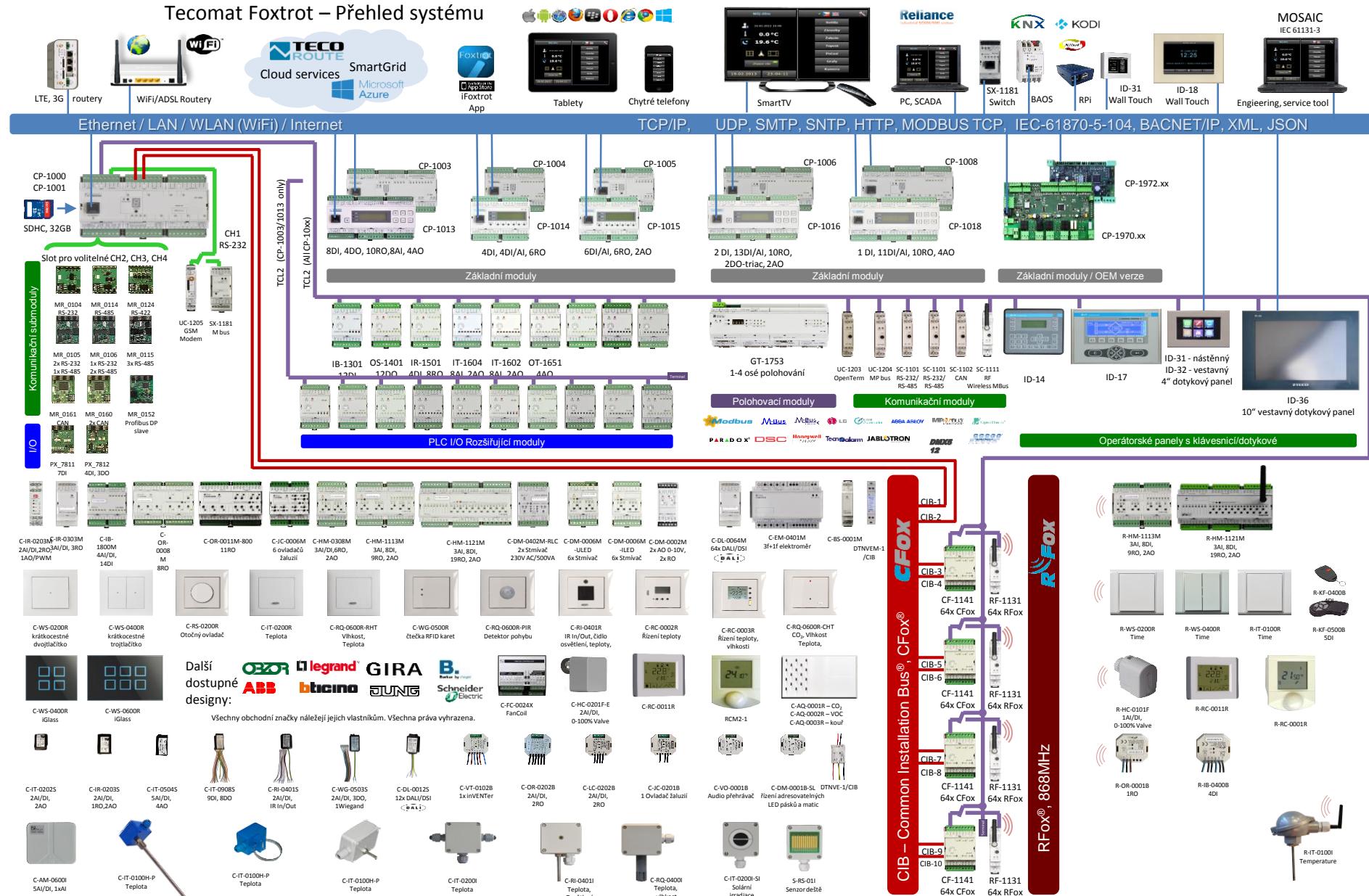


Foxtrot optimizes individual priorities of the user



Foxtrot is full general purpose ecosystem

Tecomat Foxtrot – Přehled systému



WEB VIZUALIZACE



SYSTÉMY ZALOŽENÉ NA FOXTROTU



TEPELNÁ ČERPADLA



VĚTRÁNÍ, REKUPERACE



TOPENÍ



SCADA, VIZUALIZACE



KLIMATIZACE



SOLÁRNÍ MĚNIČE



NÁSTĚNNÉ OVLADAČE



OSTATNÍ NÁSTĚNNÉ OVLADAČE



APP, WEB, CLOUD SLUŽBY



ZABEZPEČENÍ A PŘÍSTUPY



AUDIO VIDEO SYSTÉMY



DOMÁCÍ SPOTŘEBIČE, OSVĚTLENÍ



OSVĚTLENÍ, STÍNĚNÍ



Tecomat worldwide

Hotel
Van Der Valk
Veenendaal,
Holandsko



NL

Rodinný dům
Düsseldorf,
Německo



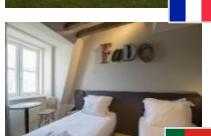
DE

Domy
Ecomodula,
Francie



FR

Hotel
My Story,
Lisabon,
Portugalsko



PT

Český pavilon
EXPO 2015
Milano,
Itálie



ES

Showroom,
Sao Paulo,
Brazilie



BR

Sběr dat
z plynoměrů,
Istanbul, Turecko



TR



CY

Museum
kyperského divadla,
Limasol, Kypr



CZ



SK



HU



PL



GR



RO



EE



UA



RU



KZ



KR



SA



GE



IR



IN



CN



JP

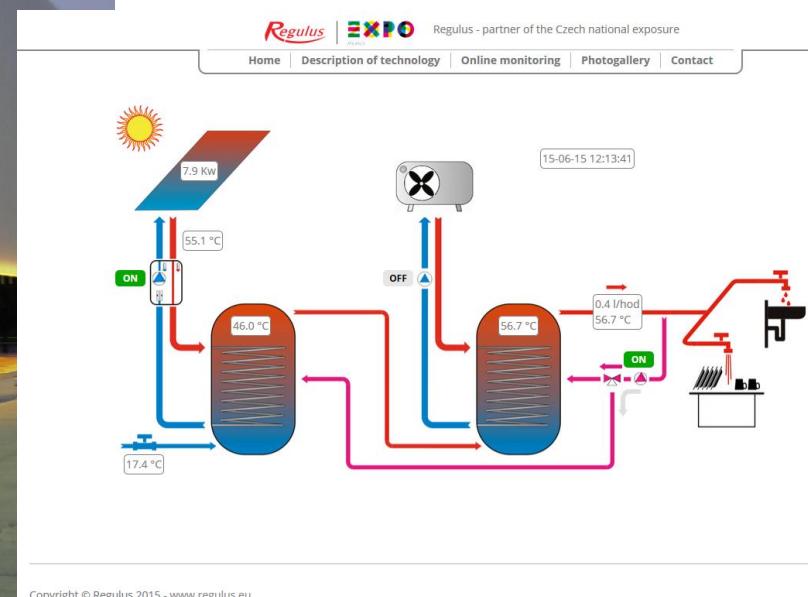
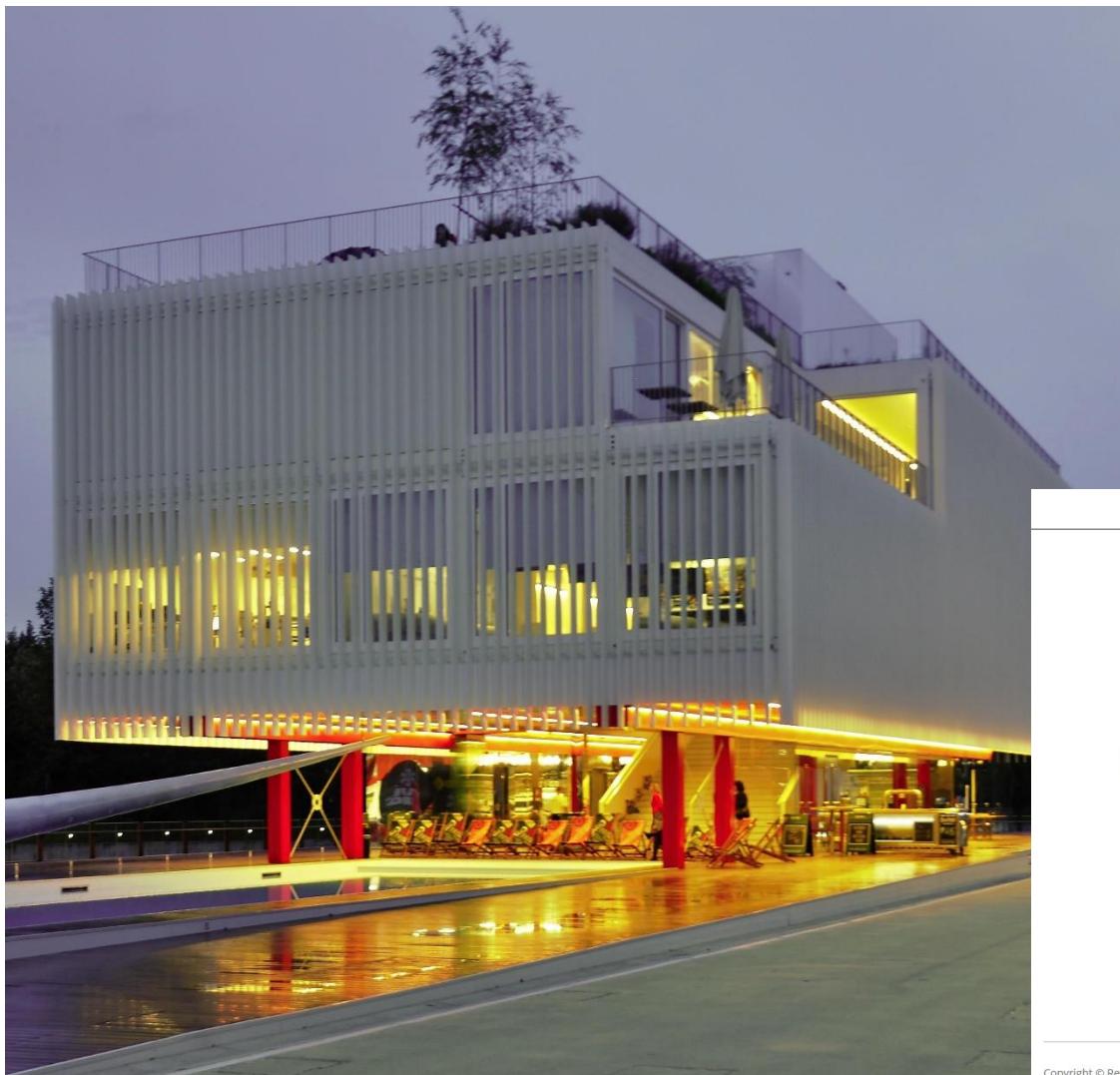
TECO
Advanced Automation









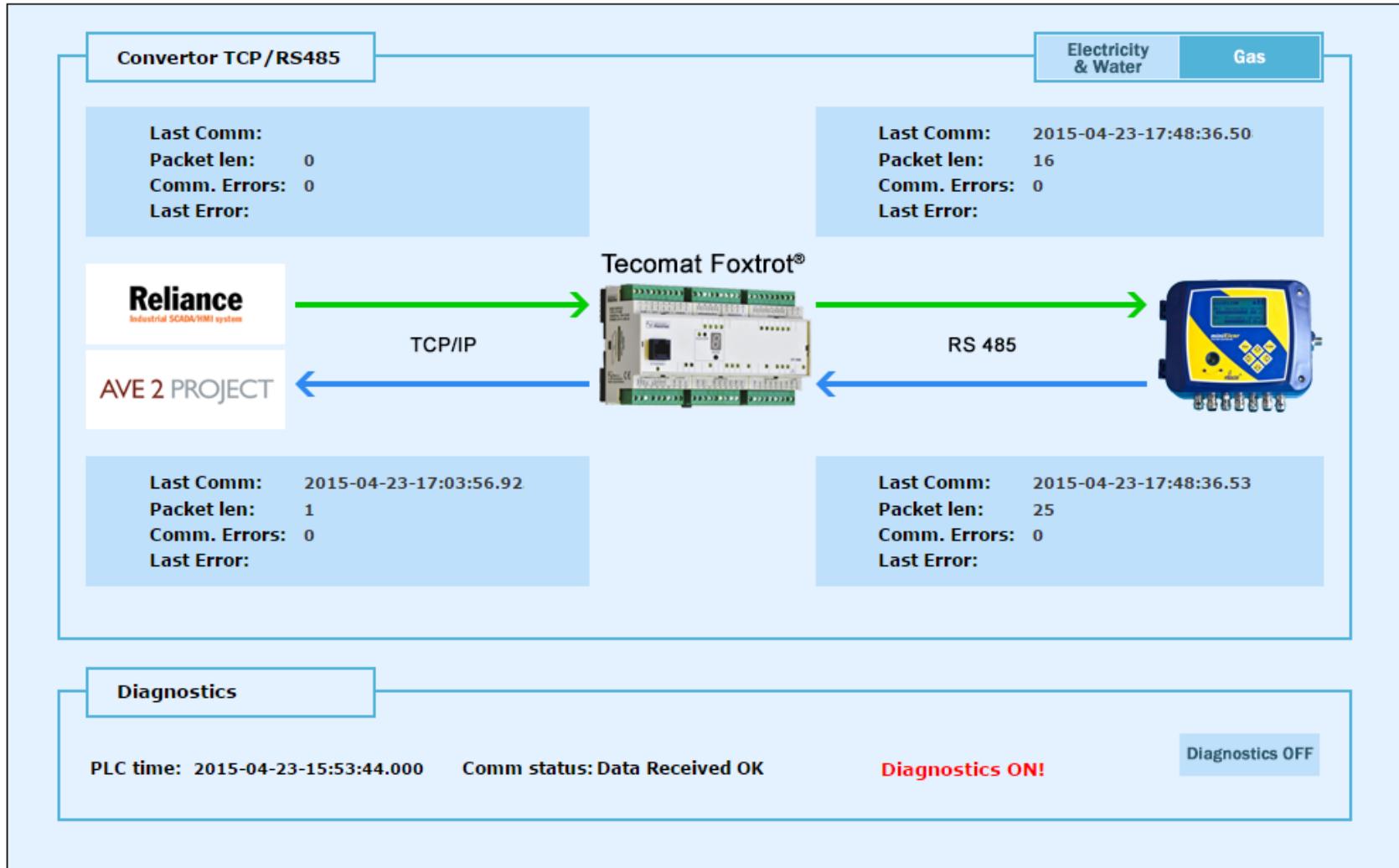
















Welcome in Teco,

- if you have real interest
- in real installations
- in real objects
- in real grid!

You are invited!

Thank you for listening

Jaromír Klaban, Teco a.s.,
Czech Republic