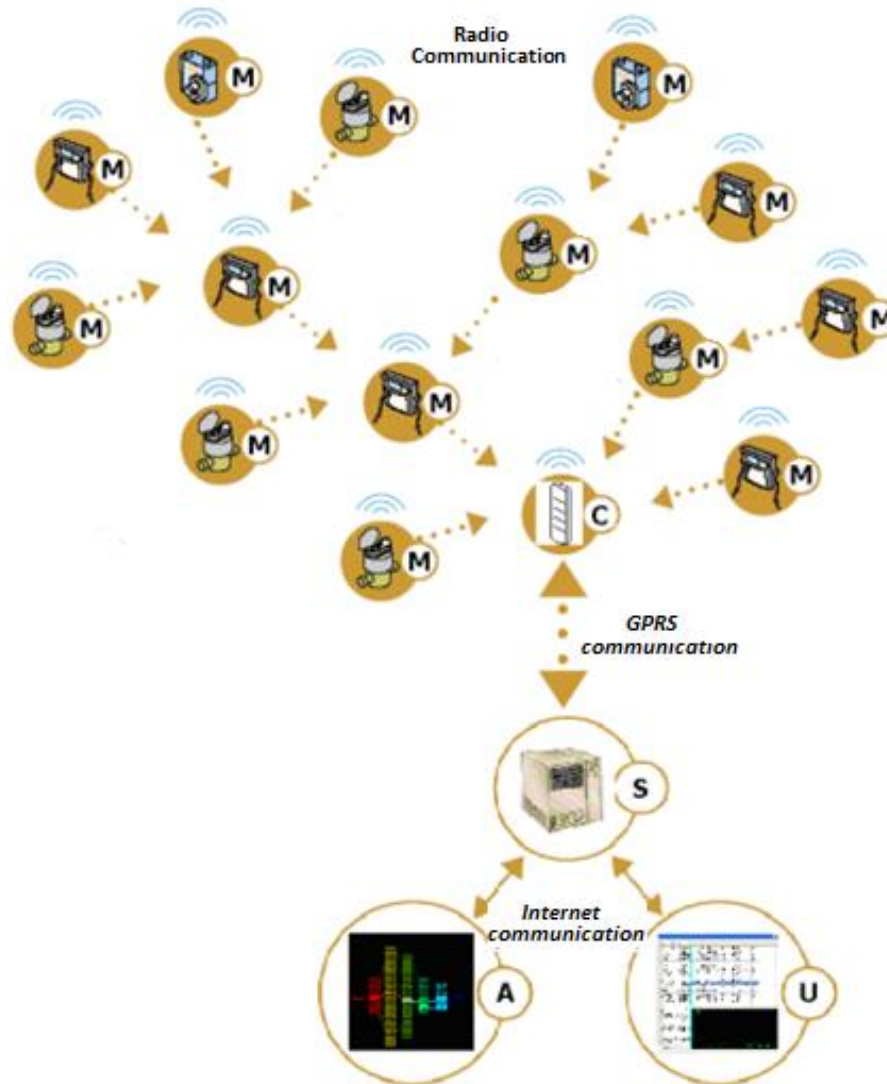


D-MESH

EFFICIENT SOLUTION FOR SMART METERING

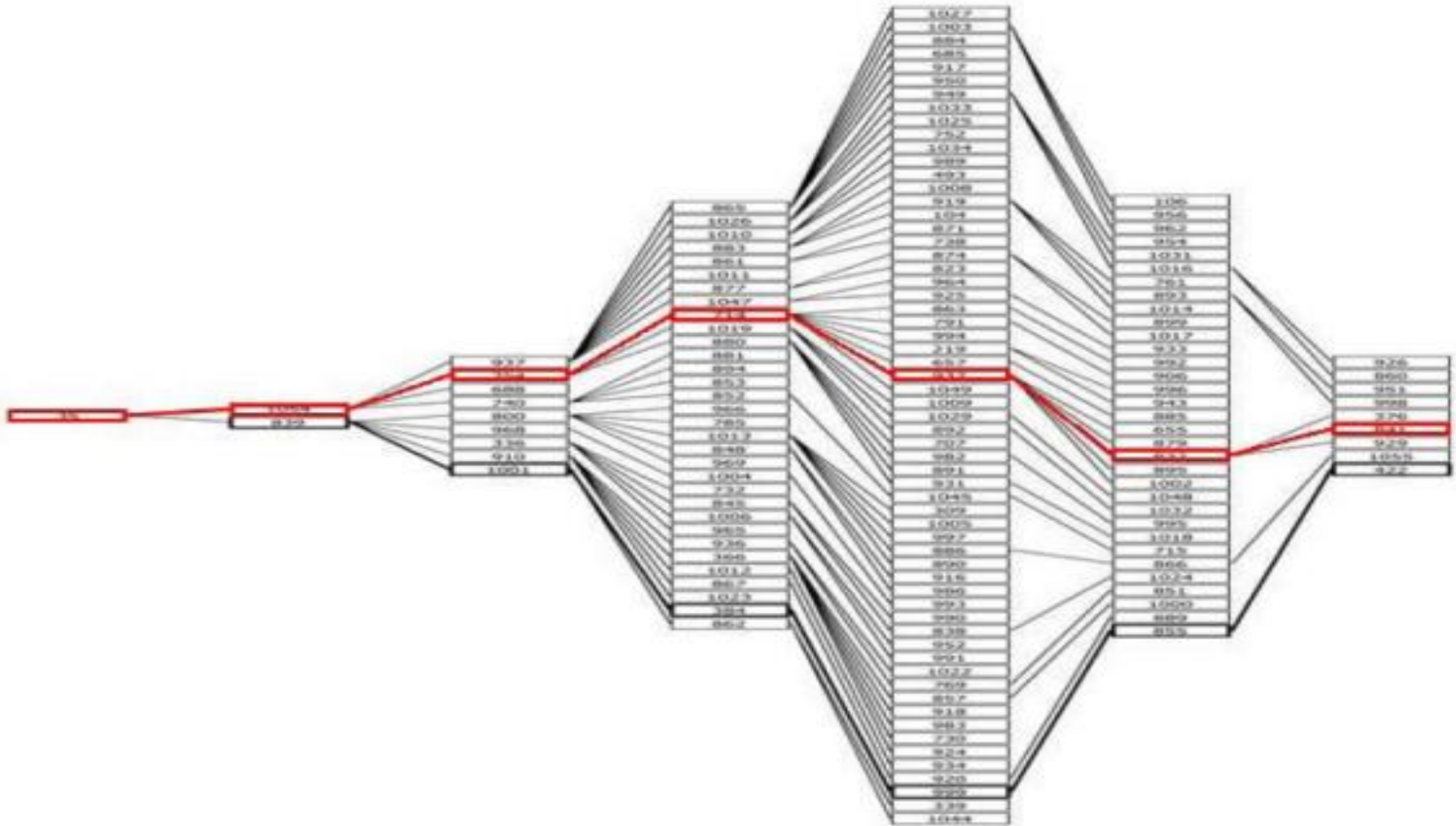
Technology Days
Westminster Conference Centre
5-6 September 2013

TECHNOLOGY OVERVIEW

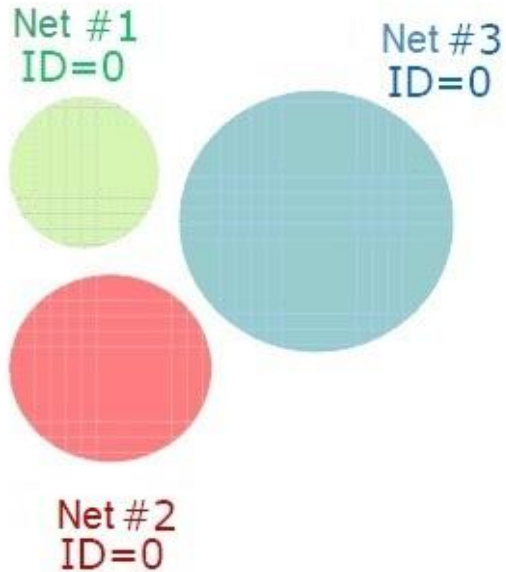


TECHNOLOGY OVERVIEW

self-routing

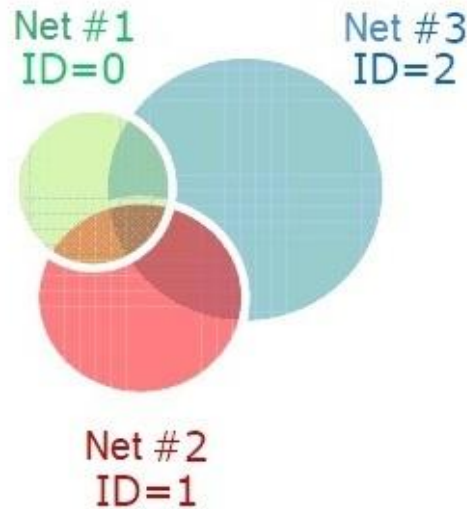


OVERLAPPING NETWORKS



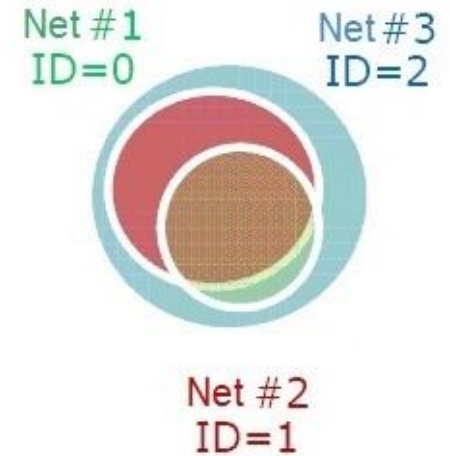
Case 1
No overlapping

No collisions



Case 2
Partial overlapping

Possible collisions



Case 3
Full overlapping

Constant collisions

TECHNOLOGY OVERVIEW

- D-Mesh supports 315, **433**, 868, 915, 2400 MHz frequencies;
- A network can cover an area up to 10 km;
- Network has self-testing and status monitoring capability;
- Low energy consumption hardware, powered by batteries for 6 years;
- Radio-modules work as 2-ways communicator and repeater;
- Capability to disconnect/connect remotely the utilities in case of non-payment or emergency;
- Load Management Control - remotely disconnect the secondary power consumptions, manage the load during peak-hours.

NETWORK HARDWARE

- Module **J100UC** - Concentrator / Router – 1 un
1.8 Wh, 220 – 240 V (new version powered by Solar battery);
- Radio-modules **D100FC** – max 250 un/network;
powered by 1 Lithium batteries AA ER14505 2400 mA/h,
connected to 1-3 metering units (0.8 m radius);
- **Pulse sensor** -1 for each gas & water metering unit,
max 500 /network;
- Lithium batteries **AA ER14505** - 2400 mA/h –
1 for each radio-module D100FC - max 250 un/network;
- Other devises on request (ex. gas controller).

NETWORK HARDWARE

Radio-Module



D100FC

Router / Concentrator



J100UC

Other devices



AD220/50
Gas controller



AD12/1000
Gas controller



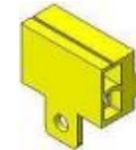
D100FC-E



J100UC-1 mobile



AA ER14505

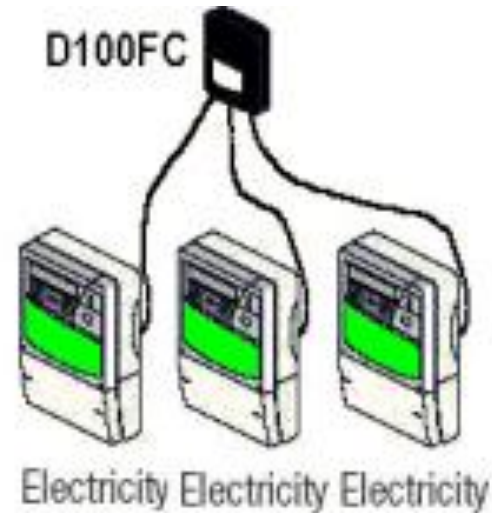
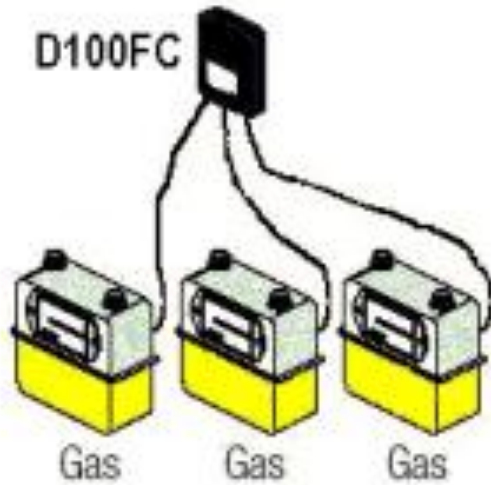
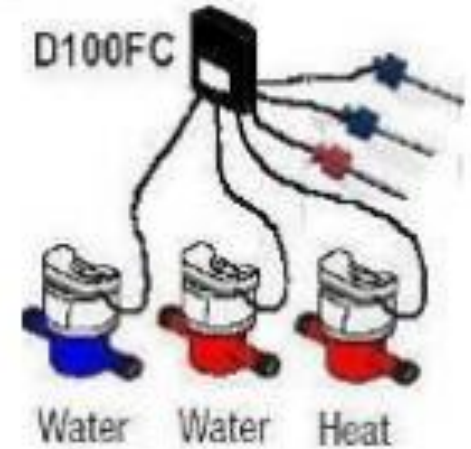
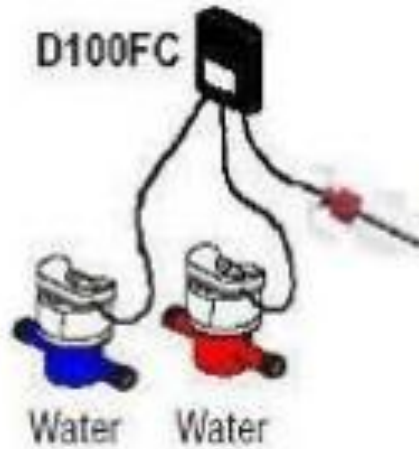
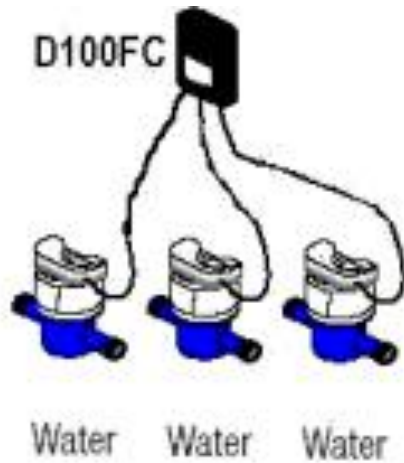


MD-23
Pulse sensor



SD-25
Pulse sensor

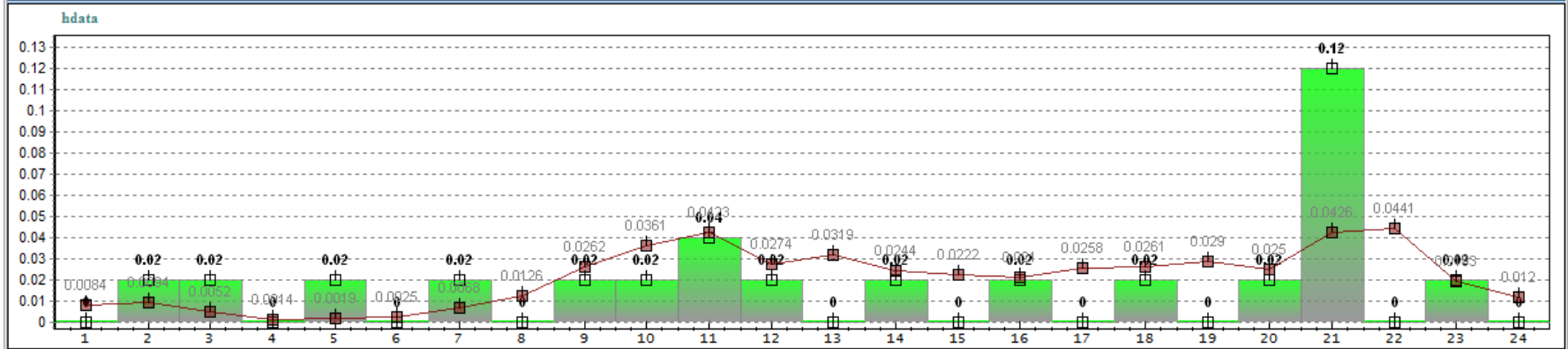
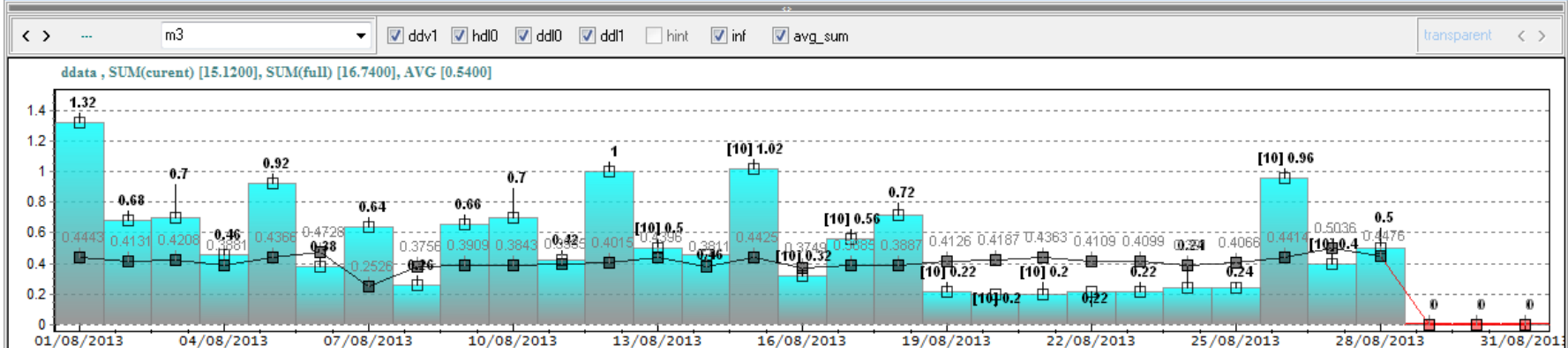
CONNECTION TYPES



DATA OVERVIEW

id	object	leak_c	hevents	flag
1	11 Object_Drumul_Vilor_38/1	5094	0x7A	0
2	12 Object_Mitrop.Dosoftei_126	1793	0x1A	0
3	29 Object_Albisoaia_82/8	1680	0x3E	0
4	85 Object_Valea_Trandafrilor_6/2	1373	0x1C	0
5	19 Object_Valea_Trandafrilor_20	1309	0x3E	0

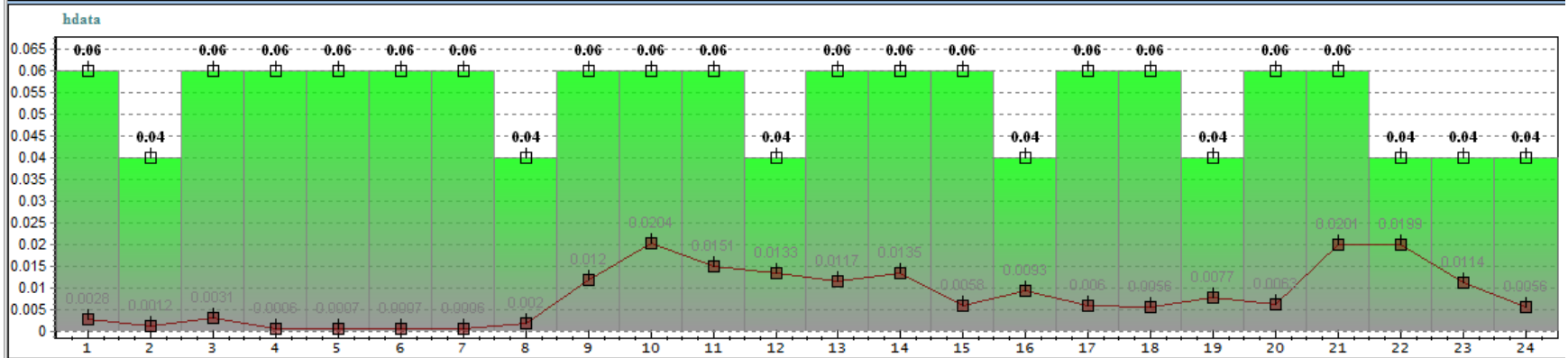
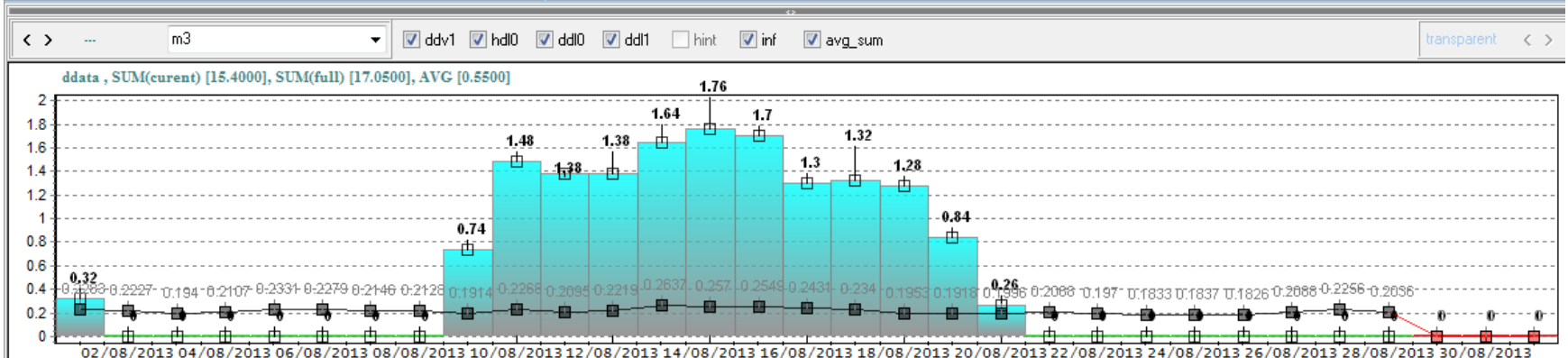
slave_id	count_id	offset_cou	hour	date	idnp	name	ap	count_value_0	24h	master	slave_c	hever	leak_l	soft_k		
1	1343	71215726	0.0000	00:00:00	2013-08-28	0	user	138	1781.0600	0.5000	39	21	0x10	519	7	100
2	1484	71218166	0.0000	00:00:00	2013-08-28	0	user	140	5416.3900	1.0000	90	103	0x0	499	7	100
3	1388	71215662	0.0000	00:00:00	2013-08-28	0	user	45	5630.3500	0.7800	80	62	0x0	438	7	100
4	1414	71217547	0.0000	00:00:00	2013-08-28	0	user	36	5558.4400	0.8200	84	4	0x0	405	7	100



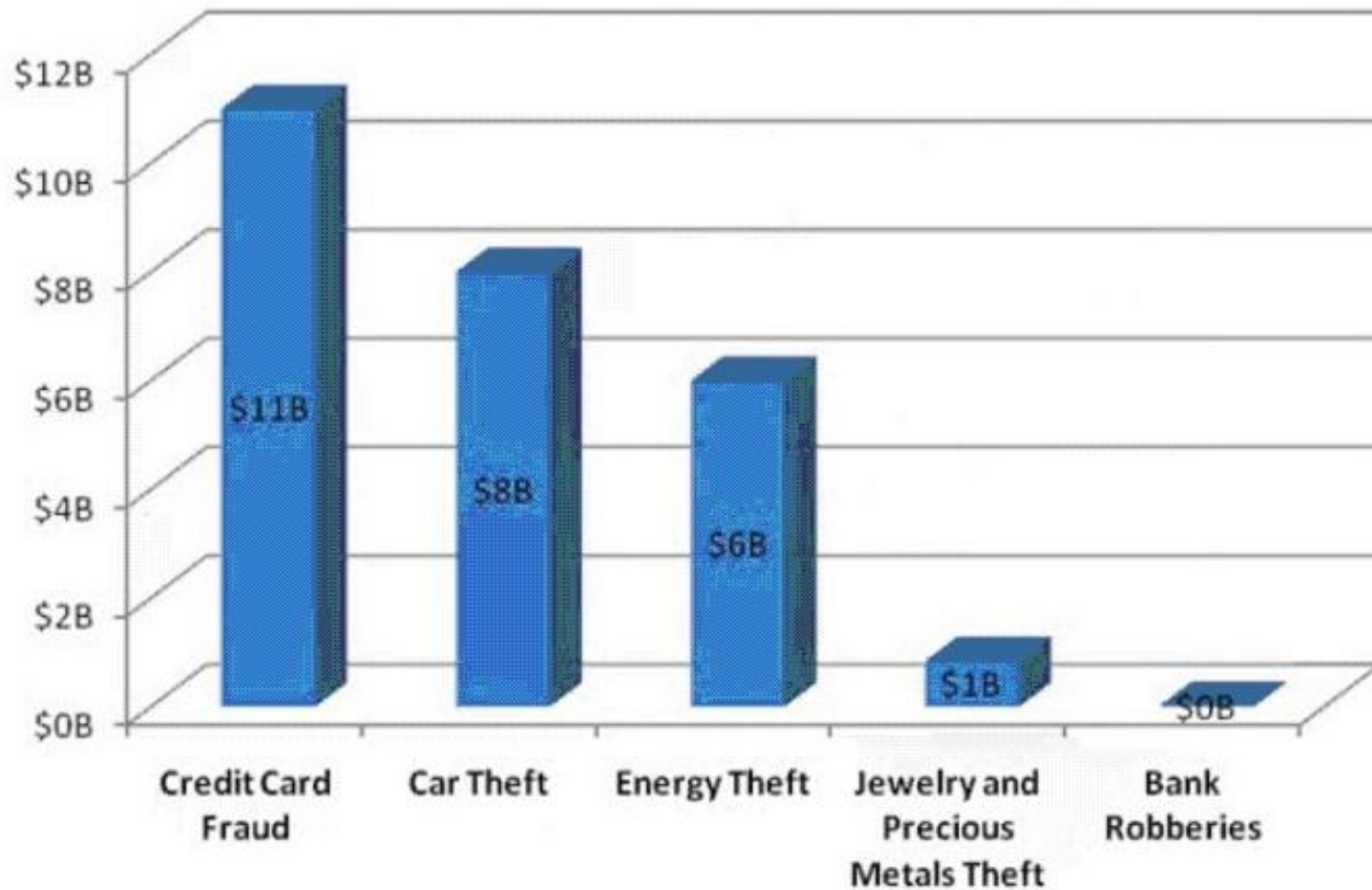
DATA OVERVIEW

id	object	leak_ob	hevents	flag
57	74 Object_Mircea_cel_Batrin_20/6	633	0x10	0
58	75 Object_Botanica_Veche_45	0	0x10	0
59	77 Object_Mircea_cel_Batrin_39/3	0	0x10	0
60	78 Object_Tiraspol_2/1	0	0x0	0
61	79 Firma_Ovadenco_N	72	0x0	0

slave_id	count_id	offset_cou	hour	date	idnp	name	ap	count_value_0	24h	master	slave_s	hevent	leak_flg
92	4496	28558678	0.1960	00:00:00	2013-08-28	06443: TONU OLGA	91	19.2660	0.0000	23	2	0x0	0
93	4813	28558886	0.0750	00:00:00	2013-08-28	06443: COTOS ALLA	92	0.0750	0.0000	20	0	0x0	0
94	4817	28558744	0.2780	00:00:00	2013-08-28	06443: TONU OLGA	93	2145.4980	1.1400	52	2	0x0	0
95	4816	28558909	0.0780	00:00:00	2013-08-28	06443: CHILARI LUDM	94	2537.4280	1.1400	88	25	0x0	0



US Theft Statistics



Electricity theft in UK

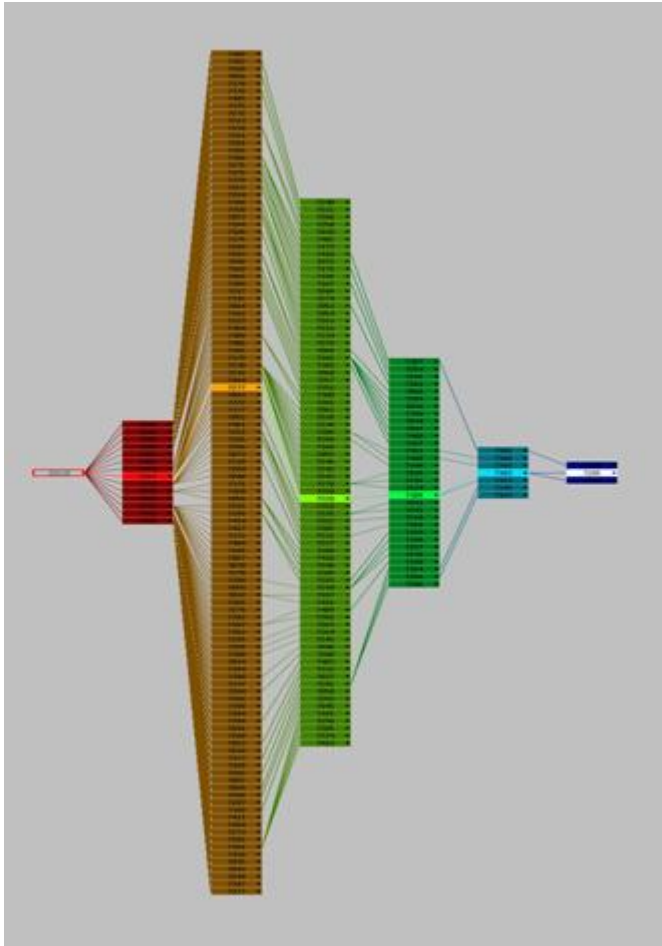
- 25,000 cases = around £200 million / year
- Approximately £7/year per household

The **cost of Project Implementation** could be **covered by savings** on losses during 5-7 years !!!

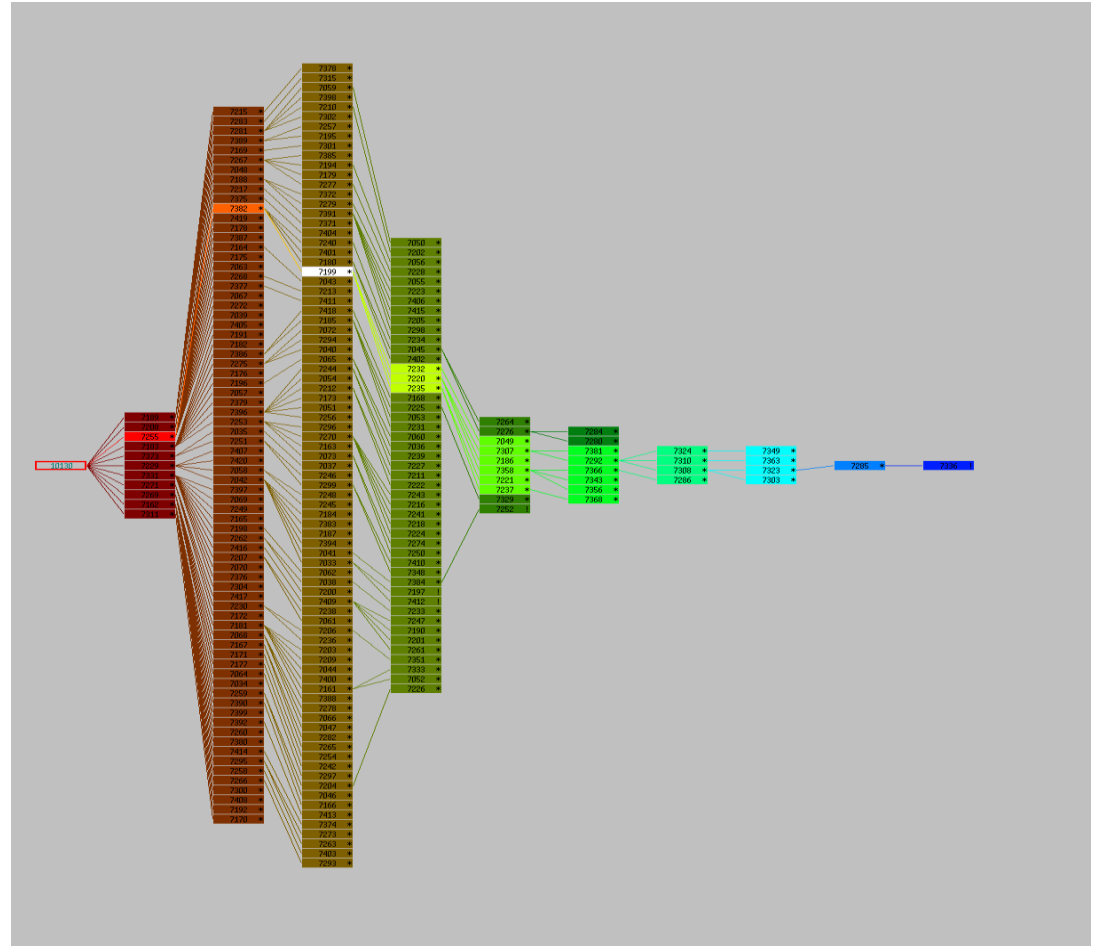
Network Tree

Nahimova 178 (Mariupoli, Ukraine)

21-Aug-13 vs 20-Aug-13



05/09/2013



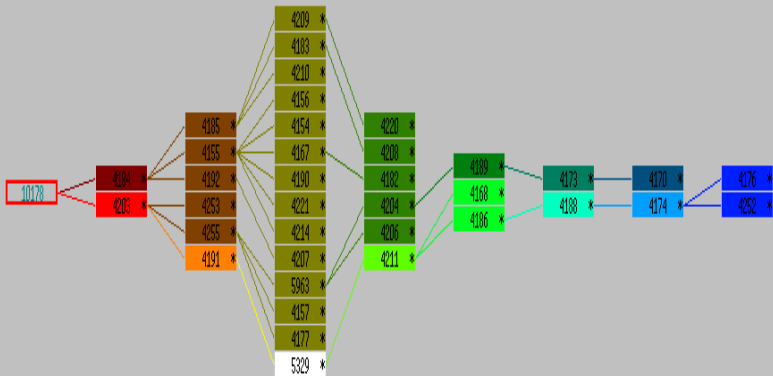
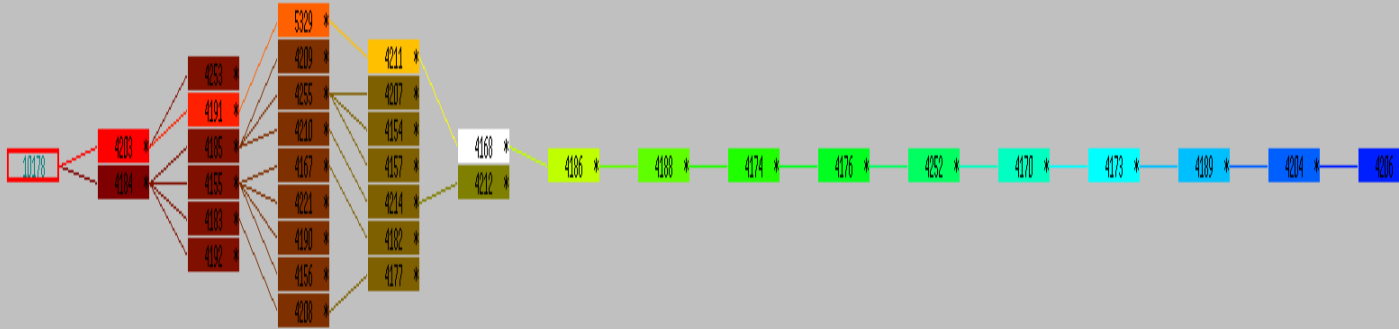
EURO-LINK & DJV-COM

13

Network Tree

Ariadna (Odesa, Ukraine)

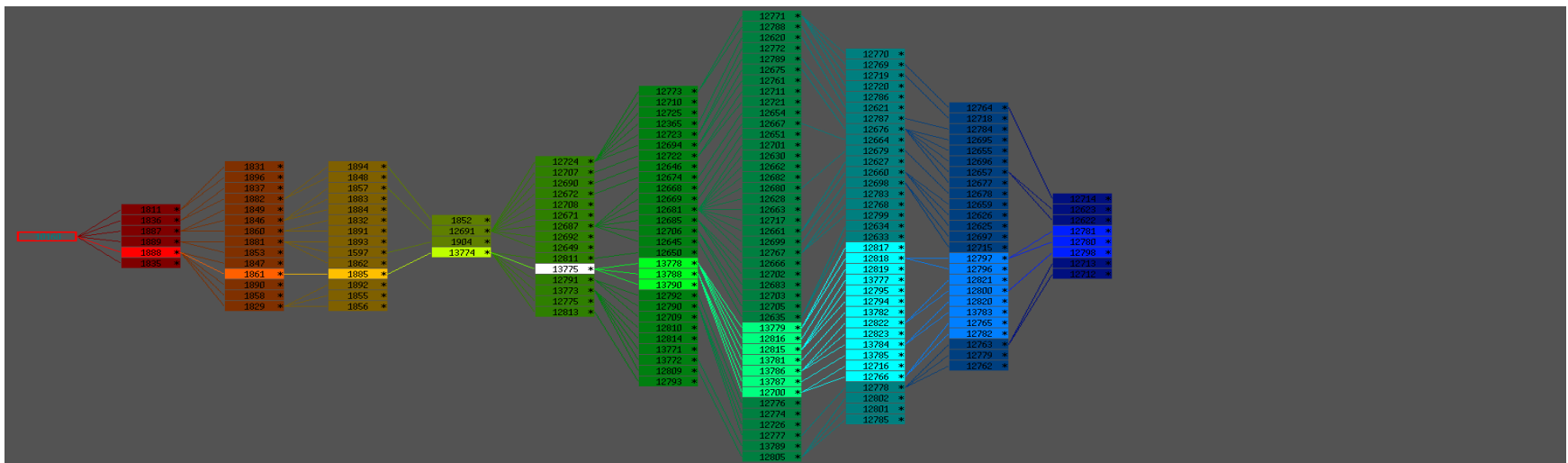
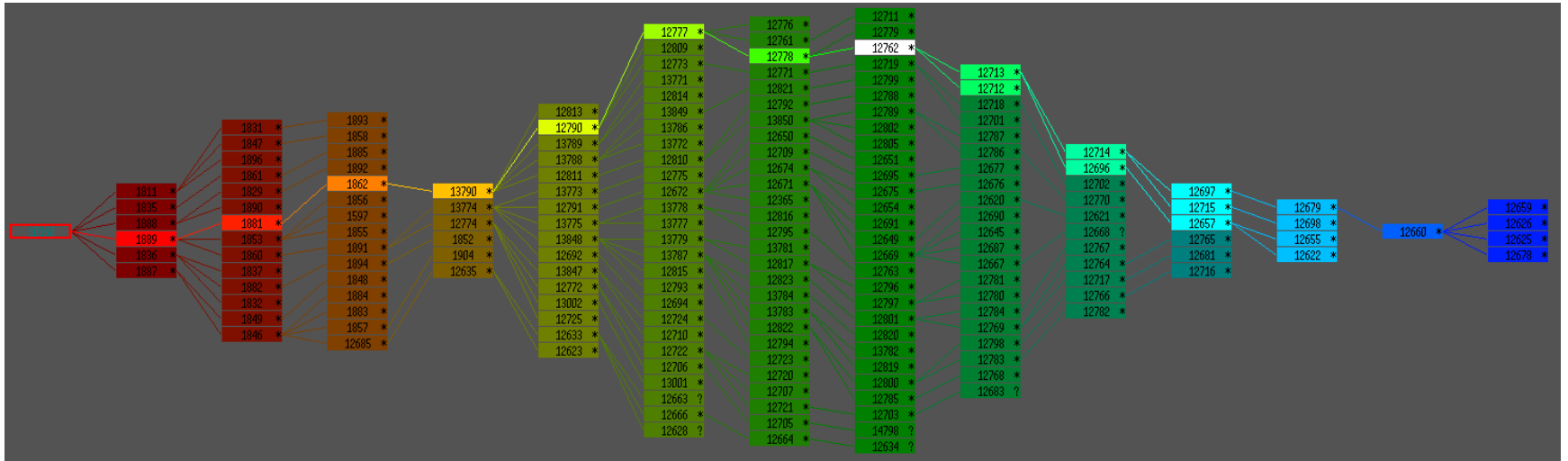
26-Aug-13 vs 21-Aug-13



Network Tree

Burebista 40/2 & Burebista 7/1 (Moldova)

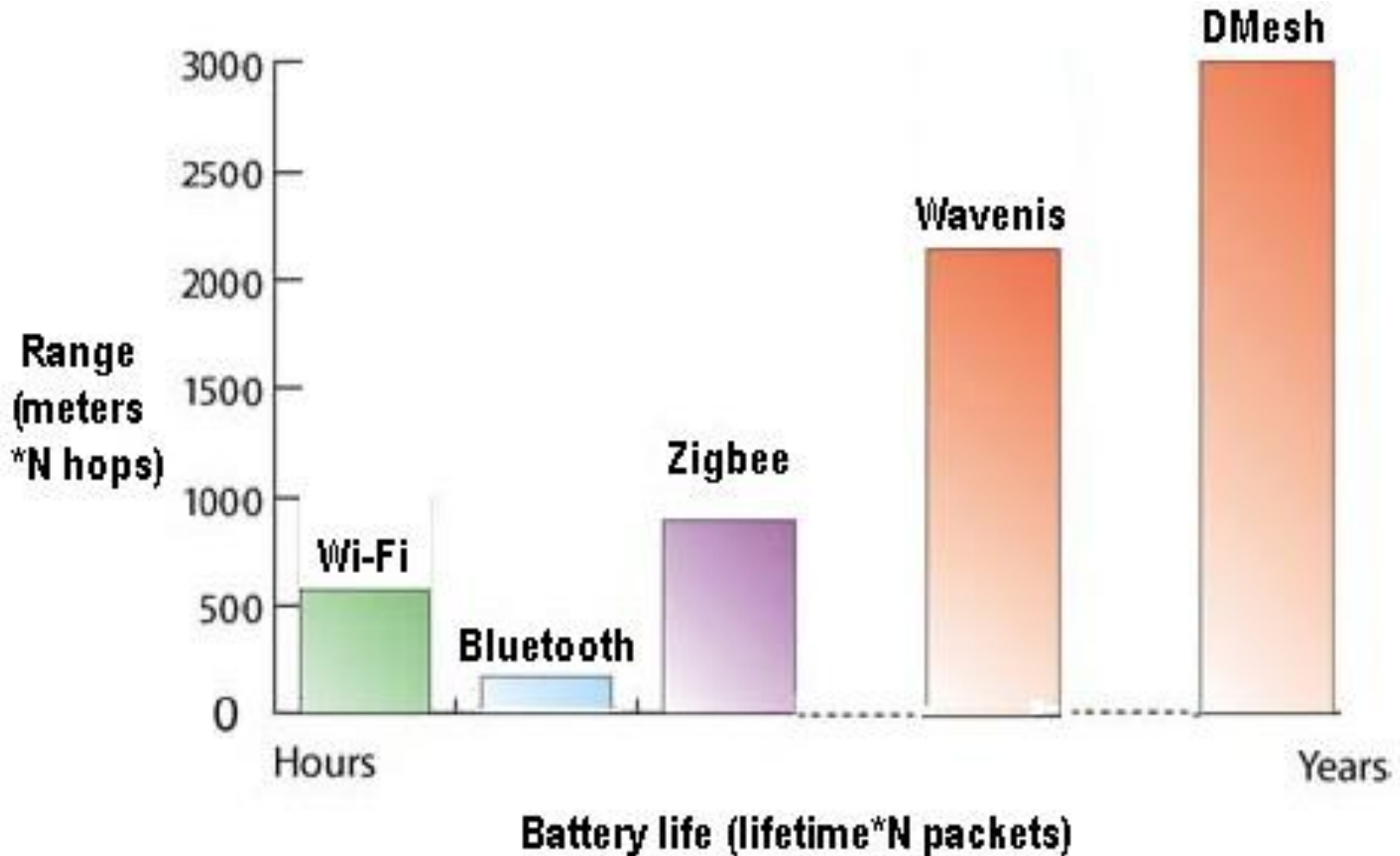
26-Aug-13 vs 21-Aug-13



D-MESH vs Others

- D-Mesh supports 315, **433**, 868, 915, 2400 MHz frequencies;
- D-Mesh 433 MHz is targeting a **120-122** dB link budget ZigBee 868 MHz - **114** dB. Every 6 dB, changes the **range by factor 2**.
- **Radio-modules** work as **repeater** and 2-ways **communicator**; ZigBee uses as repeaters additional devices with high power consumption;
- The **area covered** by a single **D-Mesh network**, will vary from 2 km (in city area) **up to 10 km** (in town area).
- We are **cost competitive**, our **prices** are very **attractive**. We can estimate the Project Cost with an accuracy 5%-10%.
- The cost of Project Implementation could be covered by savings on losses during 5-7 years;

D-MESH vs Others



Total Project Cost

D-MESH

- Network design
- Hardware
- Installation

OTHERS

- Network design
- Hardware
- Installation
- Configuration set-up
- Software
- WEB hosting
- Maintenance

SUMMARY

- We provide ready complex solution - **hardware** and **FREE software**;
- Our **protocol** is able to **communicate** with **different types of hardware** (gas, electricity, water, etc.);
- **Plug & Play**, easy to install hardware:
2 person x 8 hours = 150 meters;
- Hardware with **self-testing and status monitoring** capability;
- Possibility to **upgrade the firmware** for network hardware remotely;
- **Attractive prices** and easy estimation of **project cost** with an accuracy of 5%-10%.

SUMMARY - Benefits

- **No** more **estimated readings**. Customer is billed for what is actually used;
- Get daily packed **data with 1h or 1/2h** consumption intervals;
- **FREE** database and **software** integration;
- **Admin** and **End-user** account **interface**;
- **Mobile** friendly **application** for account and consumption control (under development);
- Possibility to identify failures, mistakes, leakages and thefts;
- **Load Management** during peak-hours;
- Ability to **control** remotely the **secondary power consumptions** to reduce the electricity costs.

FUTURE DEVELOPMENT

- Option for end-user to **set-up the desired consumption** and receive alerts when the real consumption is higher than the forecasted.
- Mobile application for end-users, with option to **manage the consumption** of electricity and heating (partial disconnect / connect), using their mobile device.
- Provide the users with **online personalized tips** on actions they can implement to reduce the consumption and respectively the cost of utilities.

MORE INFORMATION

- DJV-COM - <http://djv-com.net/>
- SamGas - <http://samgas.com.ua/ru/4clients/products/215.html>
- Texas Instruments - <http://focus.ti.com/general/docs/thirdparty/companydetailaction.tsp?supplierId=2005>
- Ofgem - <https://www.ofgem.gov.uk/ofgem-publications/57353/djv-com-8811.pdf>

CONTACT US:

EURO-LINK Business LTD

Tel: 0208 123 8760

Fax: 0207 183 7890

Mob: 078 3335 0880

e-mail: info@euro-link.net

www.Euro-Link.net

Thank you for your attention !!!