

**Interreg**



CENTRAL EUROPE

European Union  
European Regional  
Development Fund

**CitiEnGov**

TAKING  
**COOPERATION**  
FORWARD



Final Project conference  
FERRARA | 3-4 April 2019



**Green public lighting in the City of Split**



Hrvoje Matas | PP4 City of Split





TM  
**DIOKLECIJANOVA  
PALAČA**  
i povijesna jezgra Splita



40 godina u UNESCO-u

size: **XL** 100% heritage  
50% stone  
50% inhabitants



**CARE INSTRUCTIONS:**  
Keep domestic people inside  
Mix different activities  
Do not build unjustly  
Keep away from fire and destruction  
**MADE SPLIT**



## Green public lighting system in the City of Split - PLANNED

- 79 lighting points
- Area of 17.920 sq.m.
- 5 Power supply cabinets
- 82 Smart LED lamps for road lighting
- 82 Addressable controllers for central management and data collection through GSM network
- CO<sub>2</sub> reduction of **11,5 tons** annually according present solution
- **48.800 kWh** or 4.400 € annual savings according present solution
- Accurate measurement of consumption with possible error less than 2%
- Safer urban area, better visibility of the roads and crossings



# NEW SYSTEM - HARDWARE



# NEW SYSTEM - HARDWARE



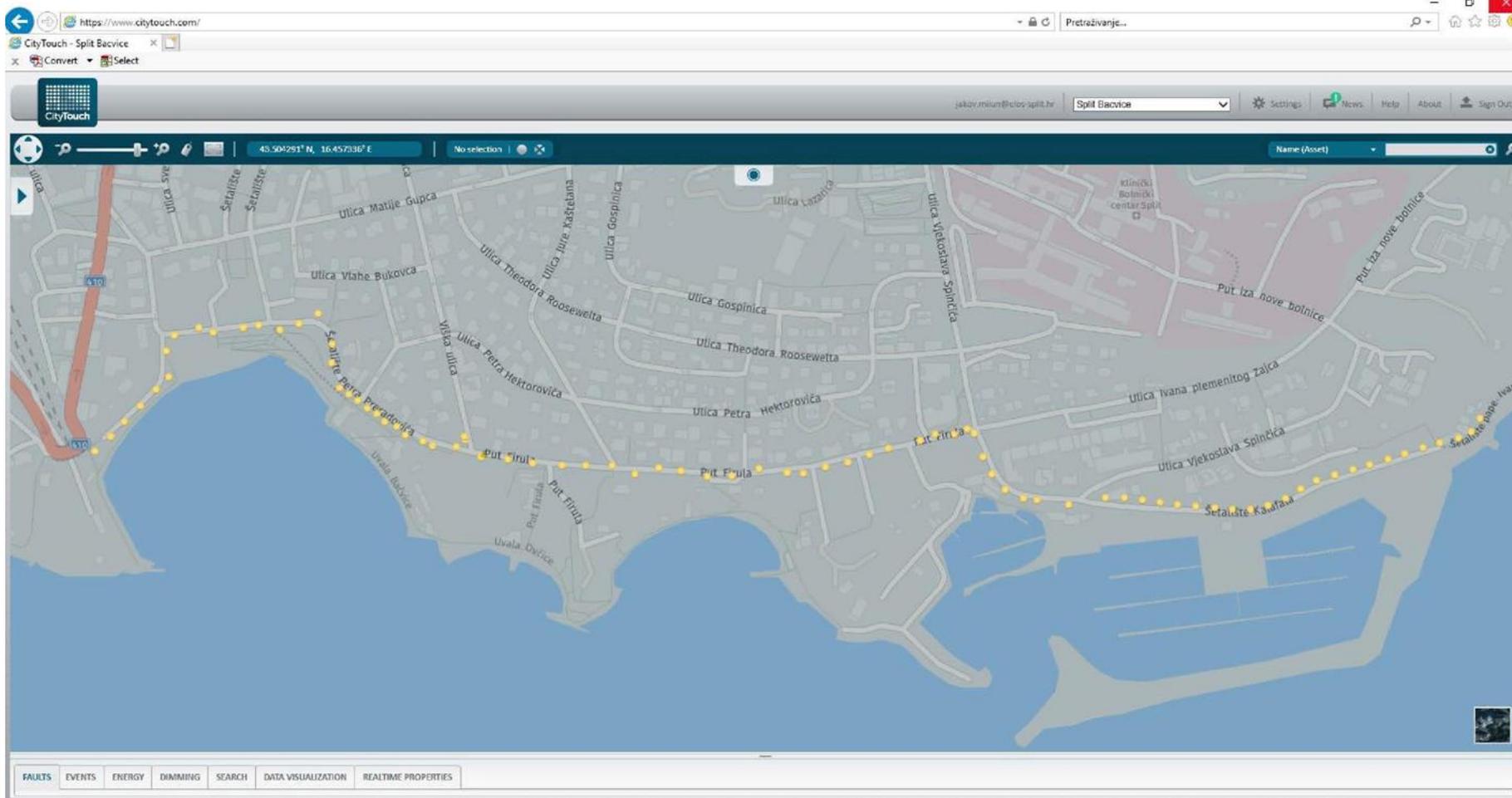
# NEW SYSTEM - HARDWARE



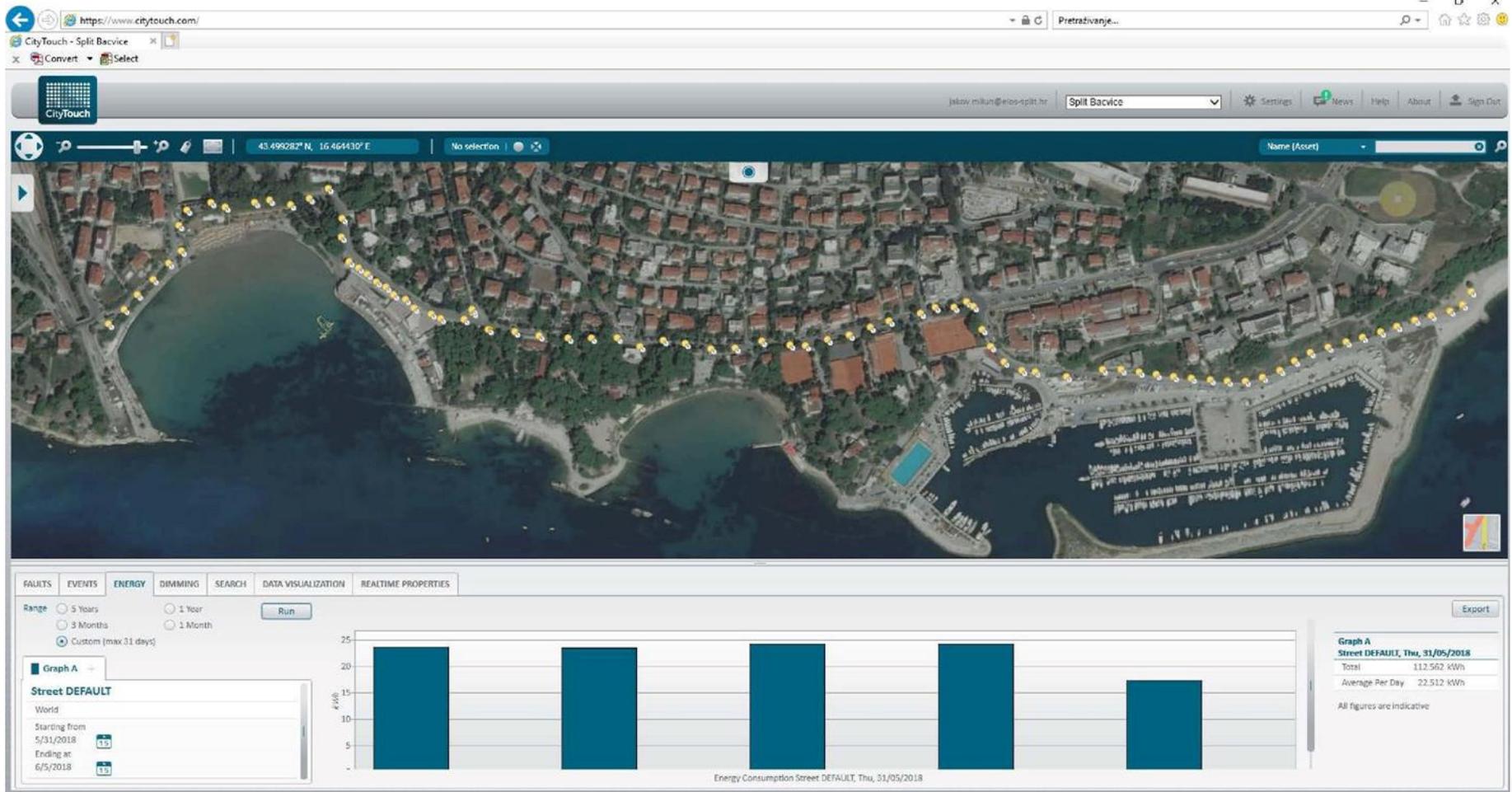
# NEW SYSTEM - HARDWARE



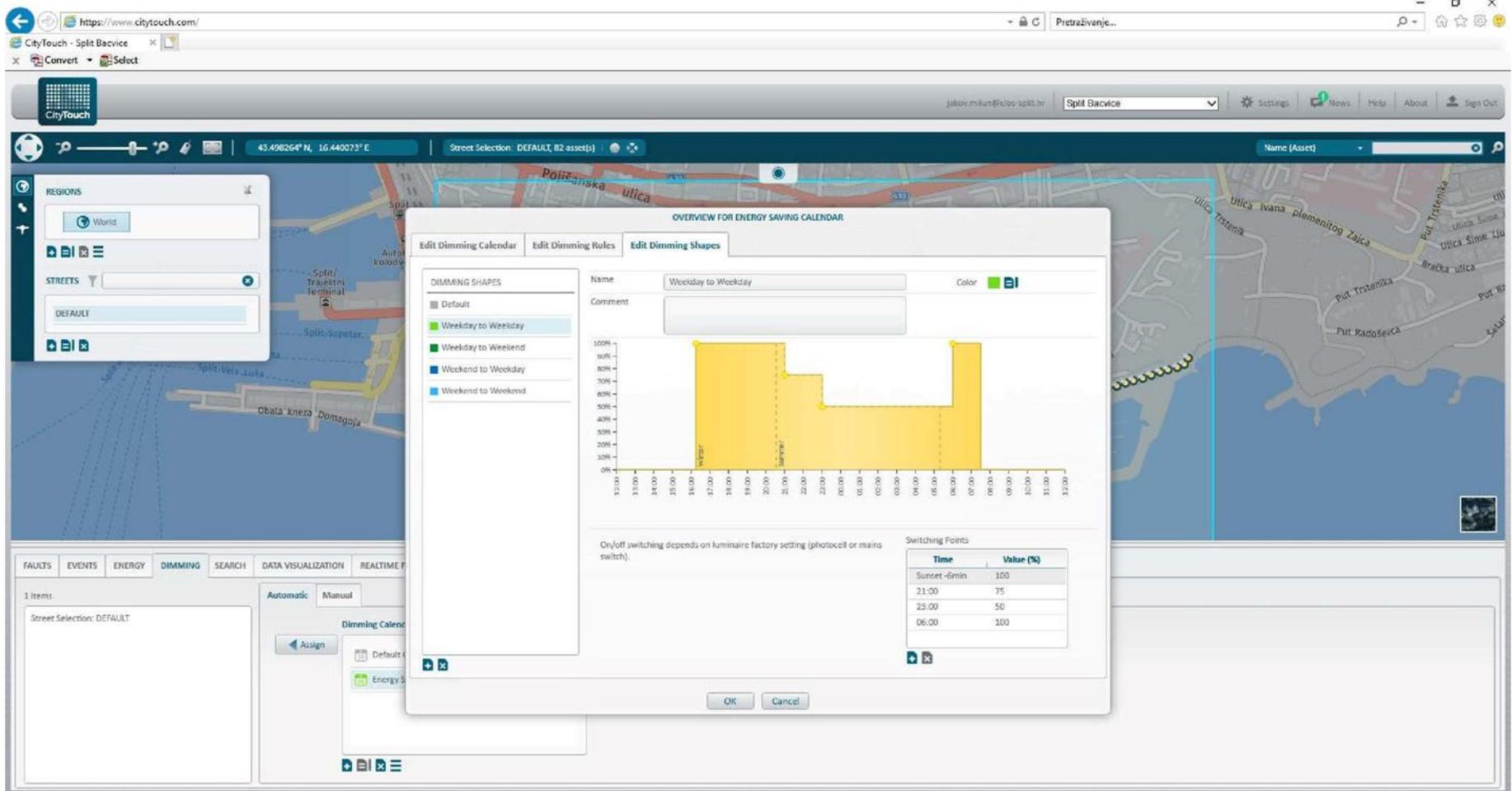
# NEW SYSTEM - SOFTWARE



# NEW SYSTEM - SOFTWARE



# NEW SYSTEM - SOFTWARE



CityTouch - Split Bacvice

45.496264° N, 16.440073° E

Street Selection: DEFAULT, B2 asset(s)

OVERVIEW FOR ENERGY SAVING CALENDAR

Edit Dimming Calendar | Edit Dimming Rules | Edit Dimming Shapes

DIMMING SHAPES

- Default
- Weekday to Weekday
- Weekday to Weekend
- Weekend to Weekday
- Weekend to Weekend

Name: Weekday to Weekday | Color: Green

Comment:

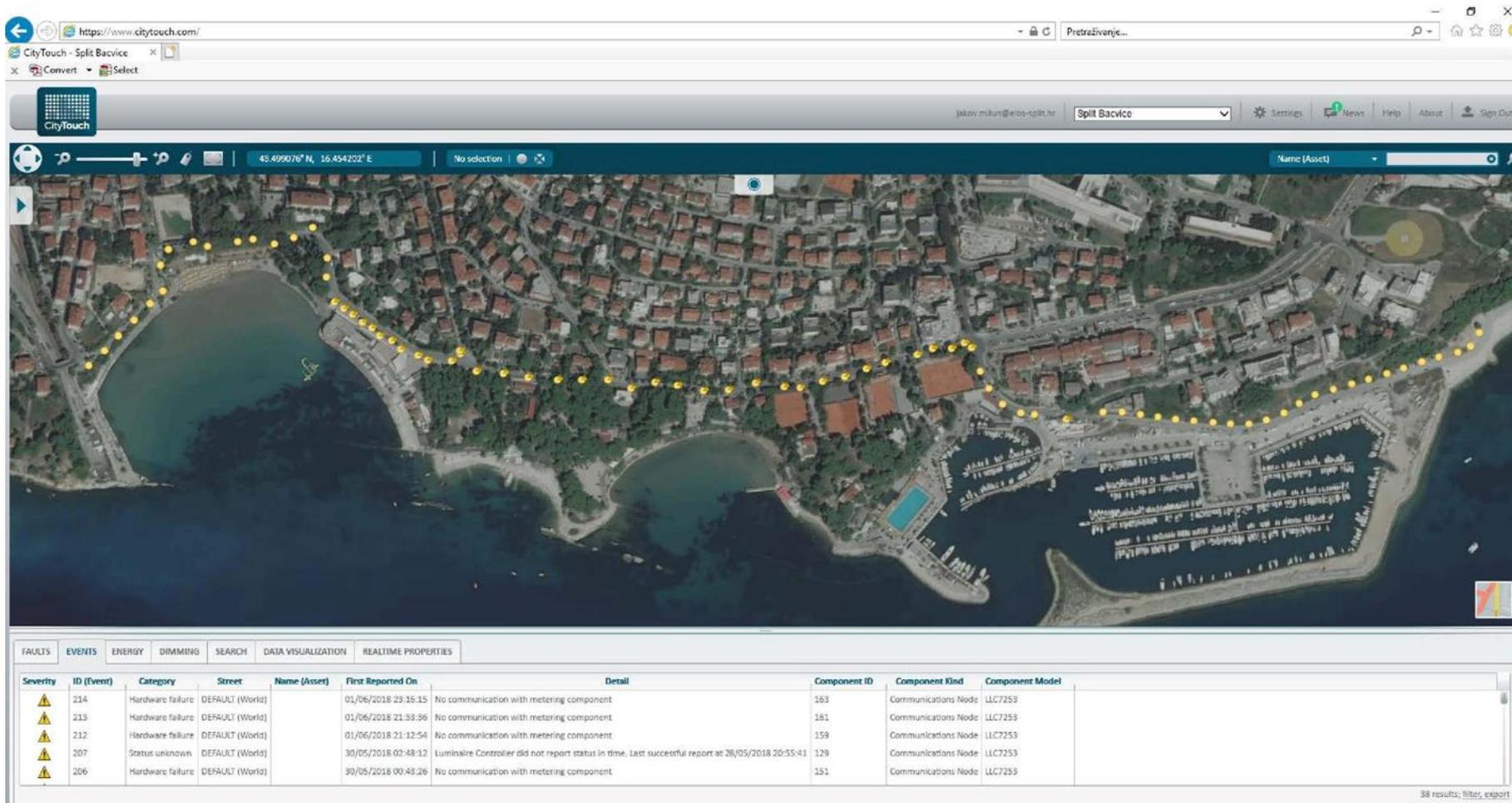
On/off switching depends on luminaire factory setting (photocell or mains switch).

| Time        | Value (%) |
|-------------|-----------|
| Sunset-6min | 100       |
| 21:00       | 75        |
| 23:00       | 50        |
| 06:00       | 100       |

OK | Cancel



# NEW SYSTEM - SOFTWARE



CityTouch - Split Bacvice

CityTouch

45.499076° N, 16.454202° E

No selection

Name (Asset)

FAULTS EVENTS ENERGY DIMMING SEARCH DATA VISUALIZATION REALTIME PROPERTIES

| Severity   | ID (Event) | Category         | Street          | Name (Asset) | First Reported On   | Detail  | Component ID | Component Kind      | Component Model |
|--|------------|------------------|-----------------|--------------|---------------------|---|--------------|---------------------|-----------------|
|  | 214        | Hardware failure | DEFAULT (World) |              | 01/06/2018 23:16:15 | No communication with metering component  | 163          | Communications Node | LLC7253         |
|  | 215        | Hardware failure | DEFAULT (World) |              | 01/06/2018 21:33:36 | No communication with metering component  | 161          | Communications Node | LLC7253         |
|  | 212        | Hardware failure | DEFAULT (World) |              | 01/06/2018 21:42:54 | No communication with metering component  | 159          | Communications Node | LLC7253         |
|  | 207        | Status unknown   | DEFAULT (World) |              | 30/05/2018 02:48:12 | Luminaire Controller did not report status in time. Last successful report at 28/05/2018 20:55:41 | 129          | Communications Node | LLC7253         |
|  | 206        | Hardware failure | DEFAULT (World) |              | 30/05/2018 00:48:26 | No communication with metering component  | 151          | Communications Node | LLC7253         |

38 results; filter, export



## July 10th 2018 Public event for promotion and official start of new system



## Green public lighting system in the City of Split - FINAL RESULTS

- 80 lighting points
- Area of 18.000 sq.m.
- 5 Power supply cabinets
- 82 Smart LED lamps for road lighting
- 82 Addressable controllers for central management and data collection through GSM network
- CO<sub>2</sub> reduction of **12,45 tons** annually
- **52.900 kWh** or 5.200 € annual savings
- Accurate measurement of consumption, errors alarm
- Safer urban area, better visibility of the roads and crossings
- No light pollution
- **Data collected during 9 months is used in energy policy decision making**



|                                 | BEFORE     | PLANNED    | FINAL      |
|---------------------------------|------------|------------|------------|
| Number of lamps                 | 79         | 82         | 82         |
| Total power                     | 15,95 kW   | 3,50 kW    | 3,05 kW    |
| Annual CO <sub>2</sub> emission | 15,35 tons | 3,85 tons  | 2,90 tons  |
| Annual energy consumption       | 65.379 kWh | 16.579 kWh | 12.476 kWh |
| Annual energy costs             | 6.400 €    | 2.000 €    | 1.200 €    |
| Annual maintenance costs        | 2.800 €    | 0 €        | 0 €        |
| Investment cost                 | -          | 74.000 €   | 72.530 €   |

**Payback period**  
8,6 years total system  
5,4 years lamps



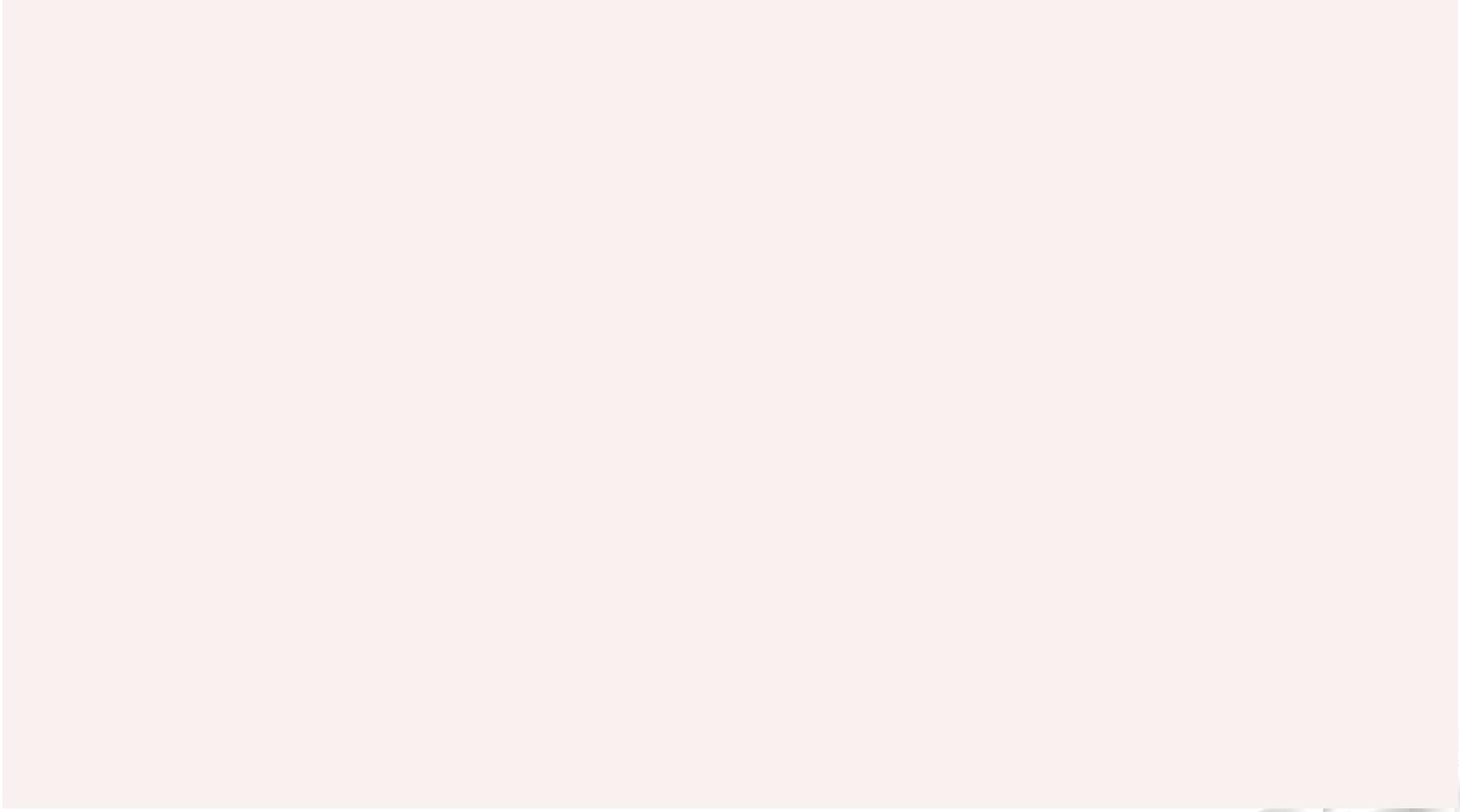
## CITY OF SPLIT PUBLIC LIGHTING SYSTEM MODERNIZATION

- Public lighting system 17000 lamps (400 km)
- 340 Power supply cabinets
- Up to 9.000.000 kWh annual savings
- CO<sub>2</sub> reduction up to 2.200,00 tons annually
- Investment cost up to 10.000.000 €
- Public procurement for Main project?

## NEXT WEEK



# PUBLIC LIGHTING EE VIDEO





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