Enabling the Business-Based Internet of Things and Services

Implementing the Internet of Things

ebbits – monitoring of car manufacturing process

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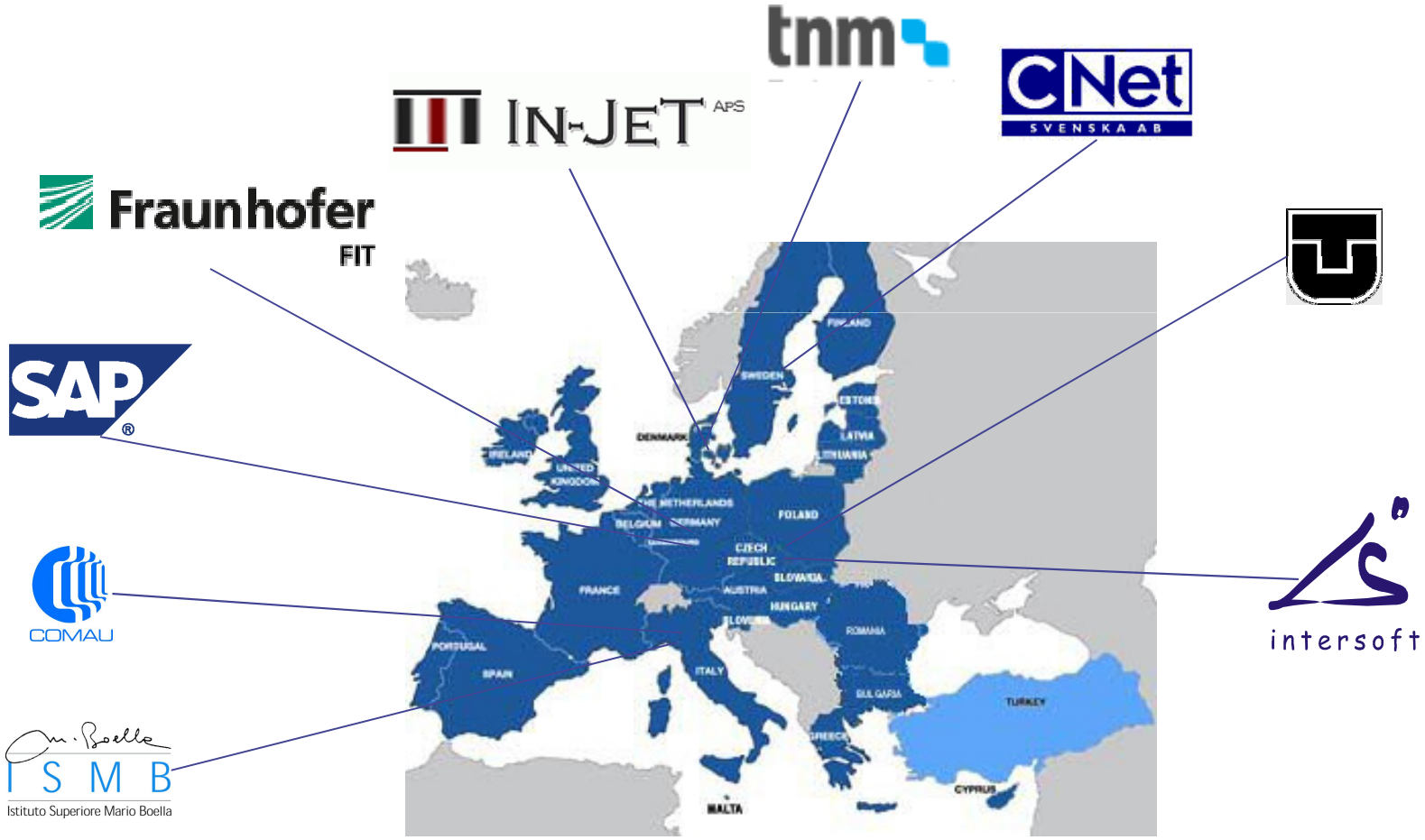
ebbits

ebbits consortium

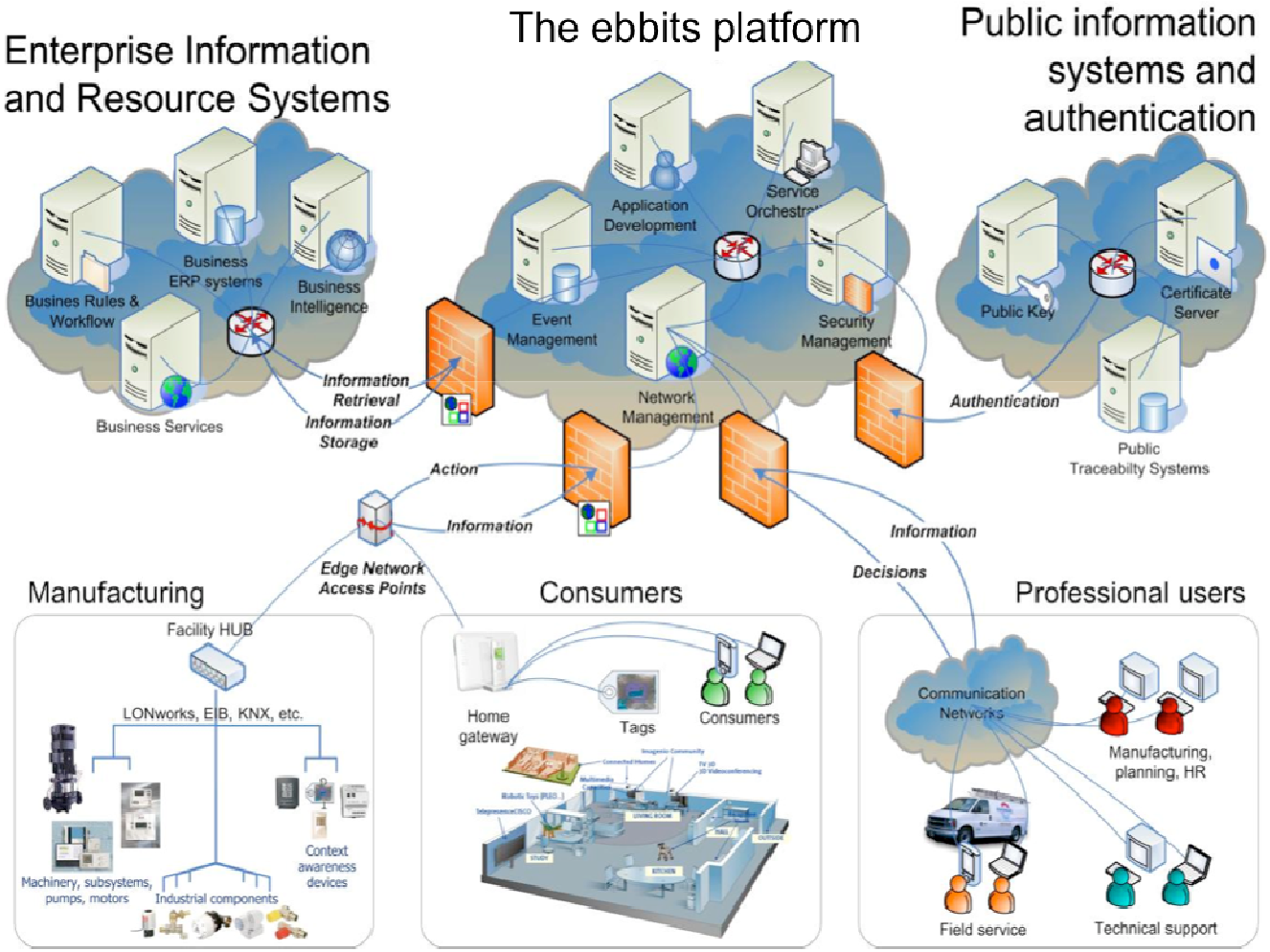
48 months /9 partners/12,0 M€ budget, 1091 pms.



Technical aim

- Develop an ***Internet of People, Things and Services (IoPTS)***-based Service Oriented platform that allows entreprises to develop and deploy a new range of ***business*** applications
  - Everything is a ***service*** and can be integrated into ***enterprise systems***
  - ***Physical world data*** feeds directly and seamlessly into ***mainstream business systems***

Enabling technologies for the Internet of Things and Services

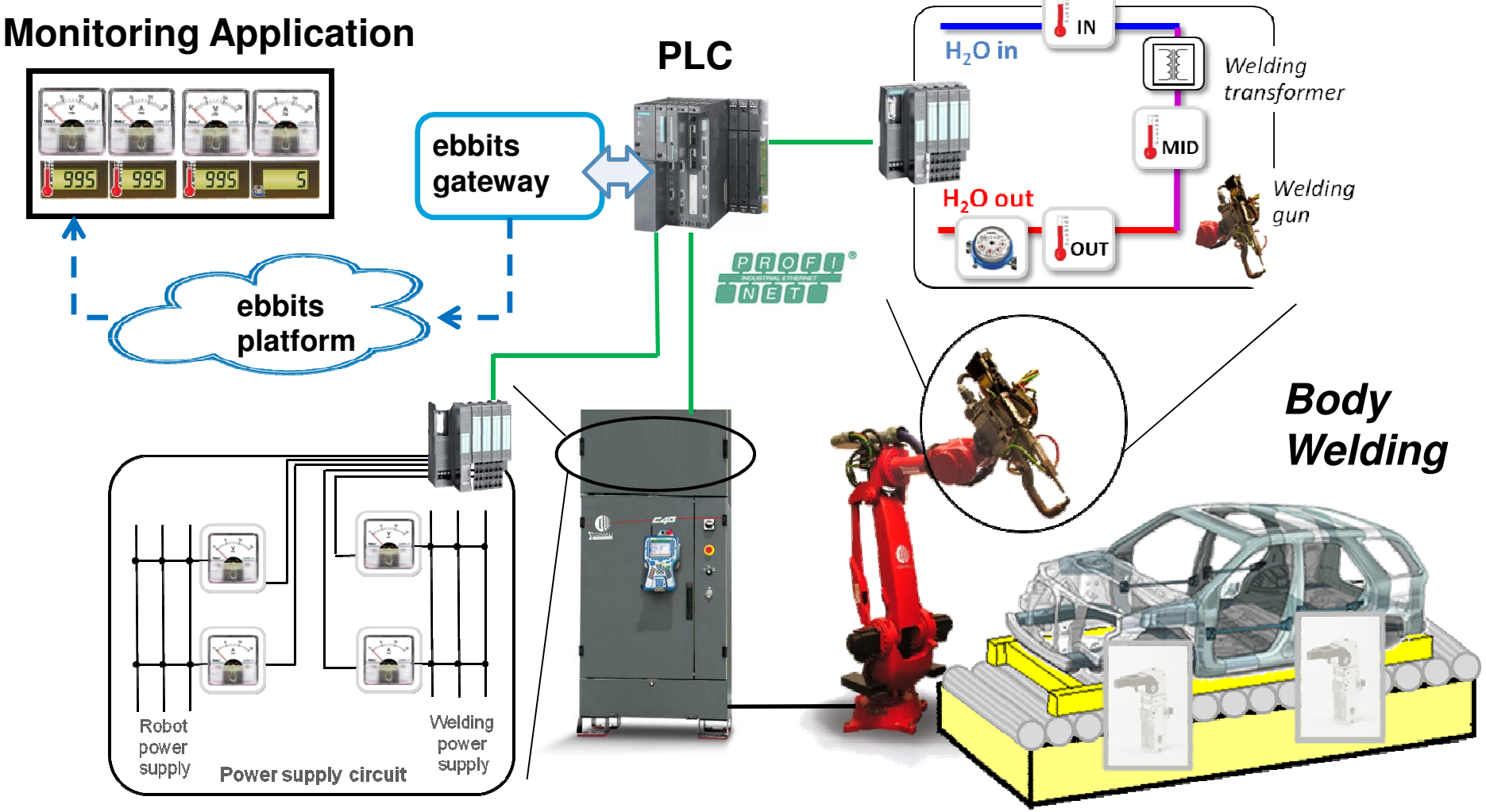


ebbits business scenarios

- ***Car Manufacturing***
  - Life cycle analysis in automotive industry
  - Energy optimization of production process
  - Performance monitoring of production process

- ***Food traceability***
  - Life cycle management
  - Product identification
    - Supply chain management
    - Logistics optimisation

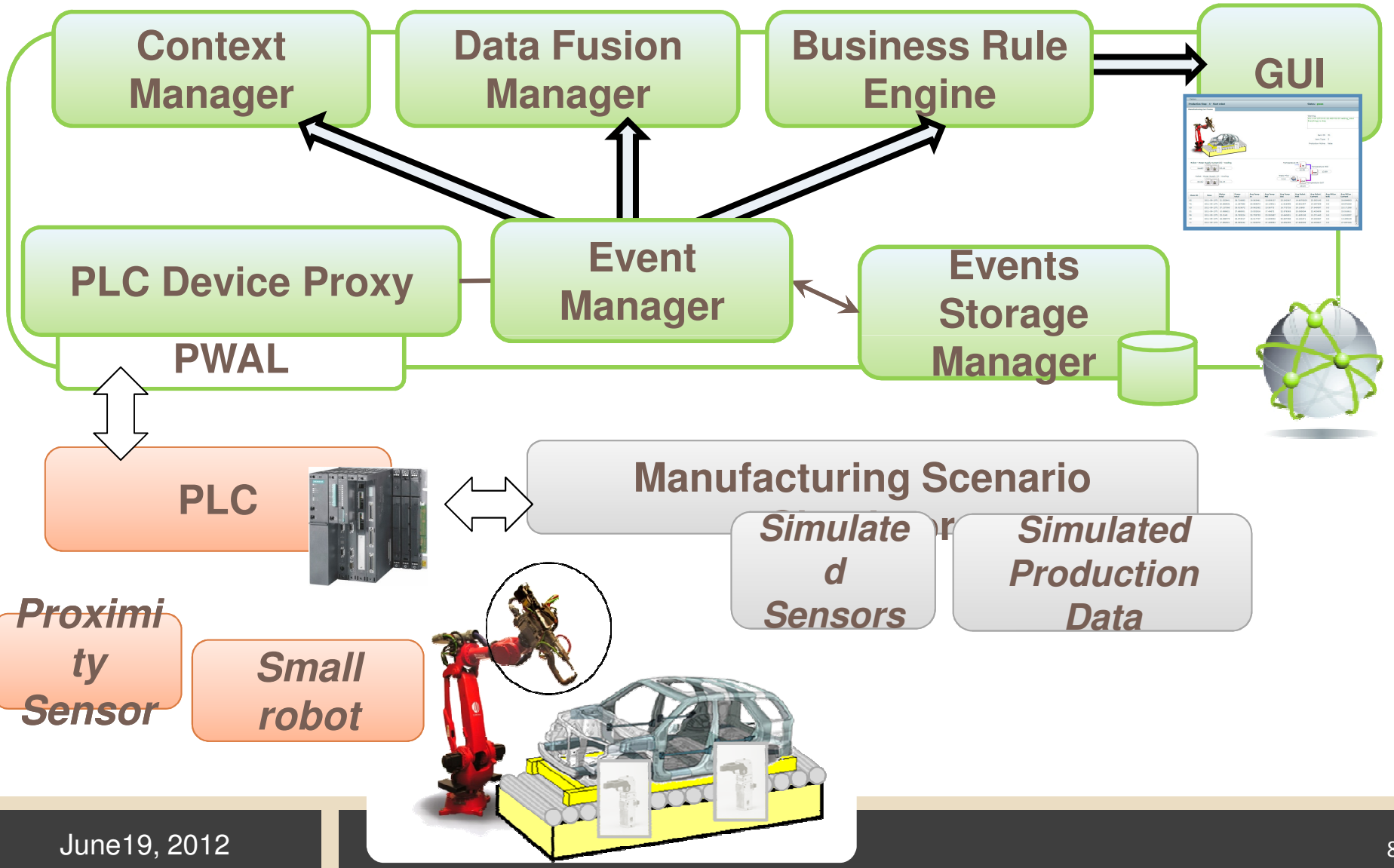
ebbits-enabled Body Welding Station



Body Welding scenario

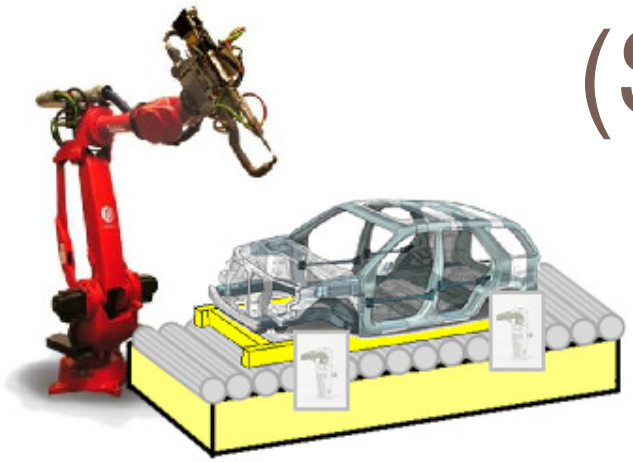
- A ***PLC*** is monitoring and controlling a ***production cycle***, involving a number of *sensors* and *actuators*, including a *welding robot*
- Through an adaptation layer, the ebbits framework can monitor and control all variables of interest, generating ***events*** related to ***physical-world*** (e.g., sensor measurements changes).
- Based on such events, ***context information*** is ***extracted and fused*** to provide the user with information such as the ***energy cost for each manufactured item***
- ***Context management*** is also exploited to assess the ***health status of the system***, issuing alarms if some component shows *unexpected behaviour*.

Demonstrator Architecture



Production Step: 4 - Start robot **Status: green**

Manufacturing Car Frame



(Snapshot)

Warning

2011-09-13T19:01:22.465+02:00 welding_robot
Everythings is okey

item ID: 51

item Type: 2

Production Active: false

Robot - Power Supply Current (A) - Cooling

16.65 15.12

Robot - Power Supply (V) - Cooling

30.06 19.15

Temperature IN

IN

10.53

Temperature MID

MID

13.99

Water Flow

0.14

OUT

Temperature OUT

28.24

Item ID	Time	Water total	Power total	Avg Temp In	Avg Temp Mid	Avg Temp Out	Avg Robot Volt	Avg Robot Current	Avg WGun Volt	Avg WGun Current
52	2011-09-13T1	21.323841	28.716883	19.563461	15.809107	23.242567	14.6078205	23.553143	0.0	26.894903
72	2011-09-13T1	20.685932	11.257683	20.969673	16.109911	11.816498	23.831947	14.337309	0.0	29.572325
53	2011-09-13T1	37.137566	35.915672	19.962082	15.56773	16.773726	39.15808	37.649597	0.0	23.171558
21	2011-09-13T1	10.588621	27.688501	13.532816	17.40672	22.578365	20.085054	22.420609	0.0	20.516611
96	2011-09-13T1	23.3149	19.765224	32.755753	23.920687	10.640651	21.609108	10.371443	0.0	16.518257
44	2011-09-13T1	24.058773	22.573317	16.317707	12.633302	30.837358	14.181671	19.202267	0.0	10.435129
11	2011-09-13T1	17.892921	28.559242	11.933578	37.289993	13.692395	27.665308	18.453827	0.0	27.897326

Thank you for the attention….

… and see you at ebbits' booth