

ThingWorx™
A PTC® Business

IoT Applications In Logistics

LiveWorx, Boston, 2016



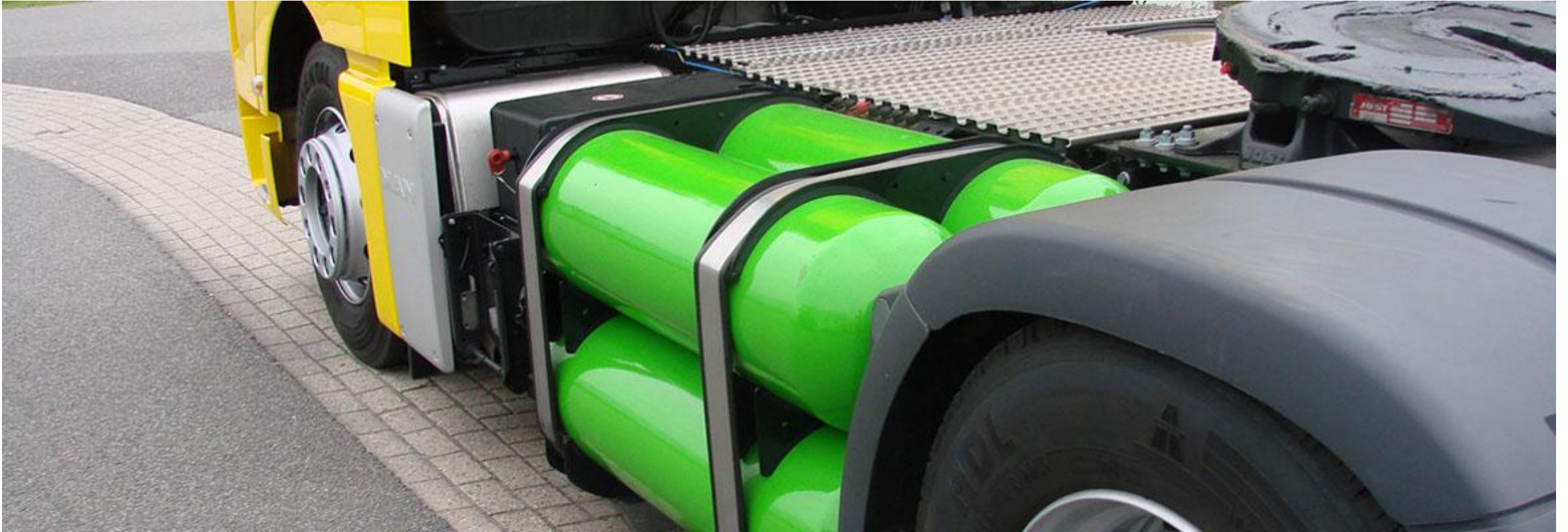
dvm
iot solutions

- Two specific logistics operations
- The current state of IoT technology
- What can IoT do for these specific logistics operations
- Developed solutions
- Case studies
- Conclusions - Q&A

- CNG is methane stored at high pressure (~20-25 Mpa / ~200-250 Bar)
- Uses
 - Vehicles: Environmentally friendly alternative to diesel
 - Facilities: Locations where pipeline NG is not available
- Pumped into thick shell tanks, attached to vehicles or distributed to facilities.



NATURAL GAS VEHICLES



CNG AT FACILITIES

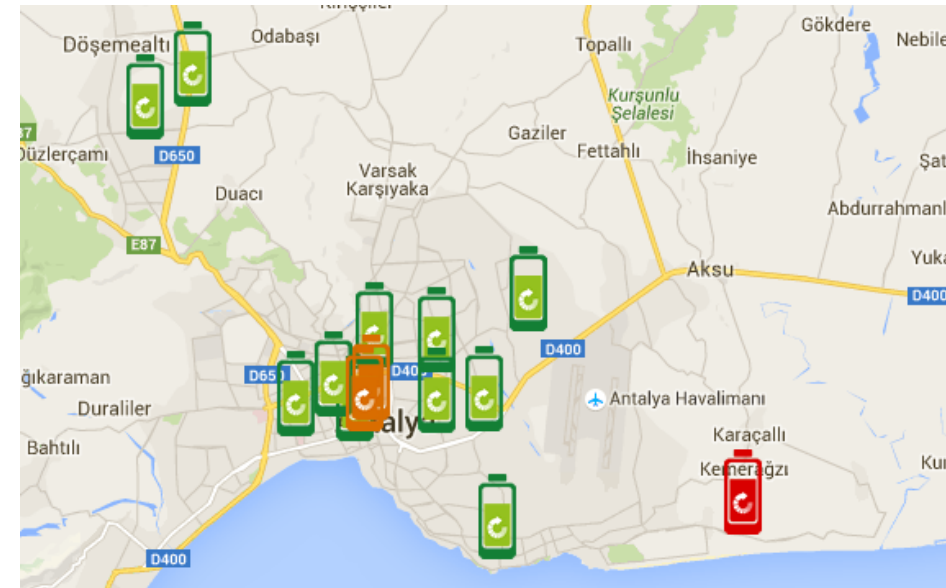


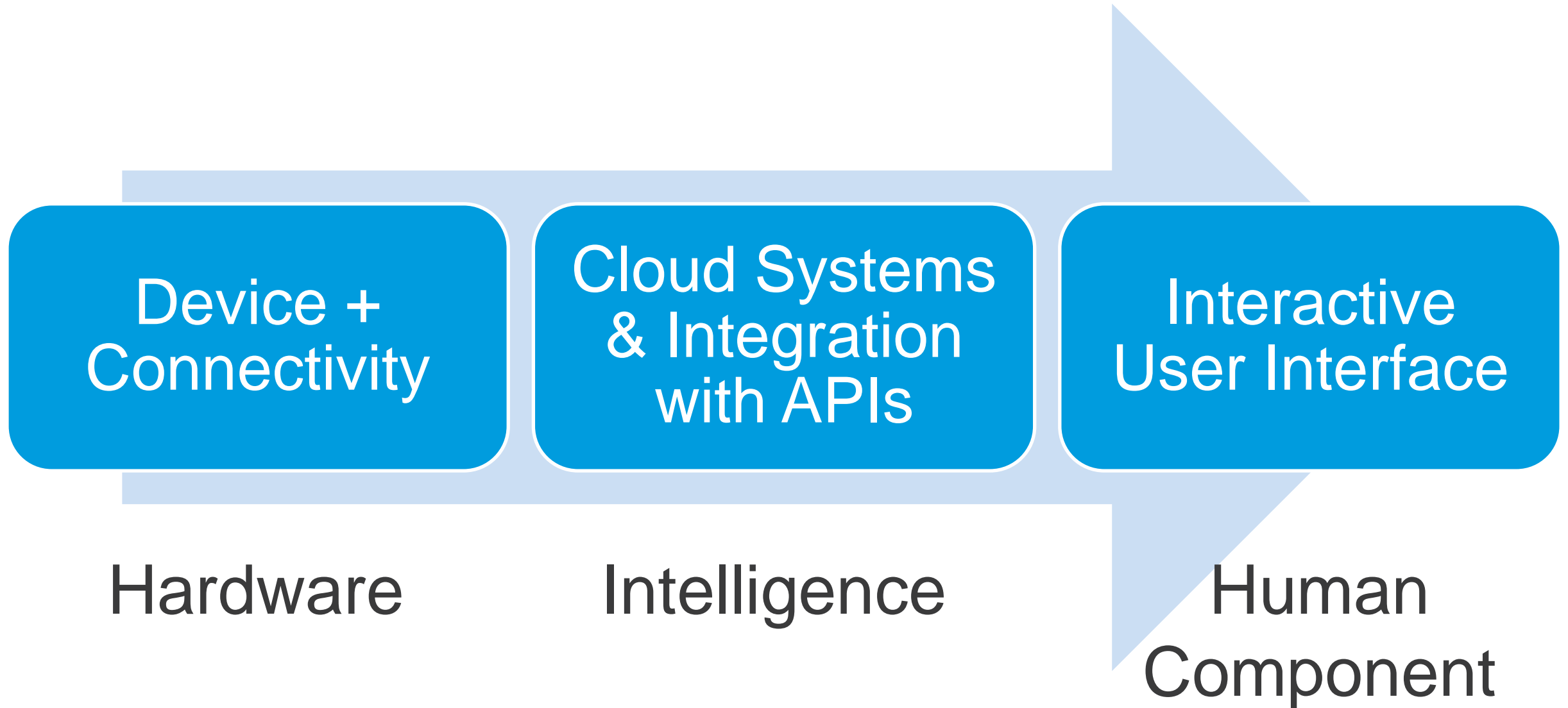
Weight of empty trailer : 21,000 kg

Weight of full trailer : 26,000 kg

Dead Load  %80

- When to plan a replenishment visit ?
 - Go early > Waste logistics resources > Boss unhappy
 - Go late > Customer unhappy > Boss unhappy
- The logistics manager: “If I could only know the stock levels at each customer site in real time !!”
- **DvM Technology: How about some IoT ?**





Solved:

Scalability

Connectivity - Partially

3rd Party Integration

Repeatability

To Be Solved:

Power Freedom

100% Connectivity

Sensor Standardization



- Stock monitoring
- Environment temperature monitoring
- Security monitoring
 - Real time alerts in case of emergency
- Efficiency
 - Analyze usage behavior, calculate intervals for just in time stock replenishment
 - Effective usage of logistics resources
- Business Transformation
 - Let the customers access the system
 - Give real time usage stats to their users > Competitive adv.



THE DIESEL EXHAUST FLUID (DEF) CASE

- Diesel exhaust fluid (DEF) – commonly known as Ad-Blue, is used as a consumable in selective catalytic reduction (SCR) in order to lower NOx concentration in the diesel exhaust emissions from diesel engines.



- ✓ Akaryakıt İstasyonları
- ✓ Otobüs İşletmeleri
- ✓ Lojistik Firmaları
- ✓ Madeni Yağ Bayileri



Similar logistics issues:

- Real time stock information is important
- Prevention of theft
- Prevent unauthorized replenishment
- Locate the fleet vehicles in real time
- Plan replenishment routes optimally

AD-BLUE PLUG AND PLAY IOT SOLUTION

DVMTRACK ICX200  Birlik lojistik demo user

07.Haz.2016 23:33 [Çıkış Yap](#)

Birlik Lojistik

- Araçlar
- Merkez
- Akdeniz
- Doğu Anadolu
- Ege
- Güney Doğu Anadolu
- İç Anadolu
- Karadeniz
- Marmara




Google

Reset Zoom



Birlik Lojistik

- Araçlar
 - JetBlue
 - 41 B 1470
 - 41 B 5186
 - 41 F 5324**
 - 41 F 5497
 - 41 F 6048
 - 41 B 1213
 - 41 F 7826
 - 41 R 1156
 - 41 R 7564
 - 41 TT 438
 - Mitsubishi
 - Merkez
 - Akdeniz
 - Doğu Anadolu
 - Ege
 - Güney Doğu Anadolu
 - İç Anadolu
 - Karadeniz
 - Marmara



41 F 5324

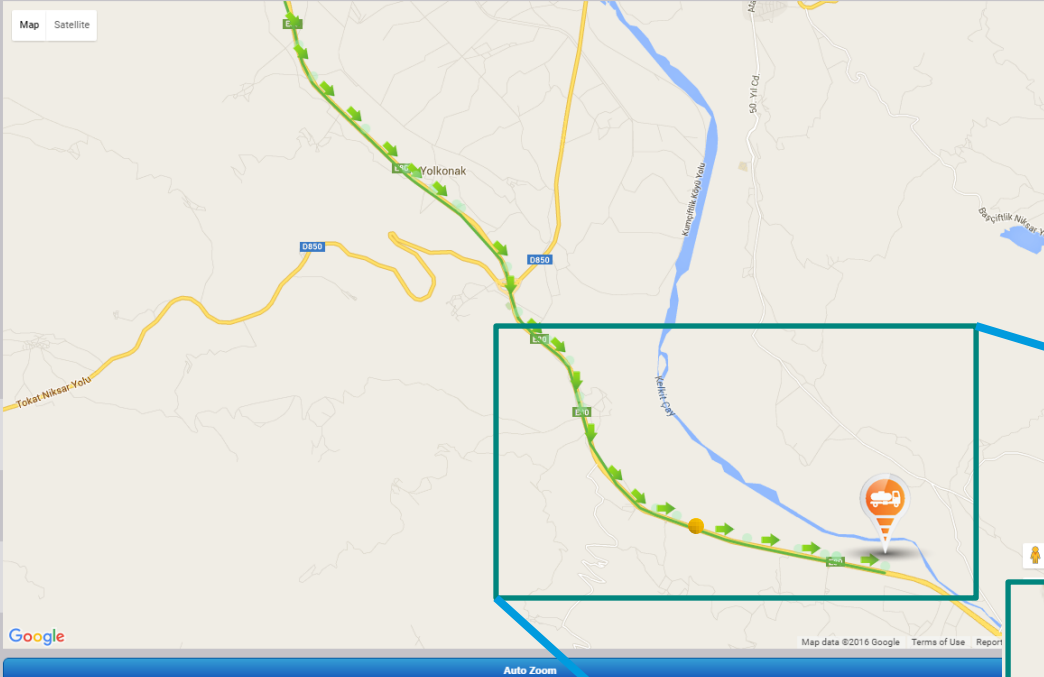
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2016-06-08 07:05:29.208 **Çarşamba**

Ignition Status

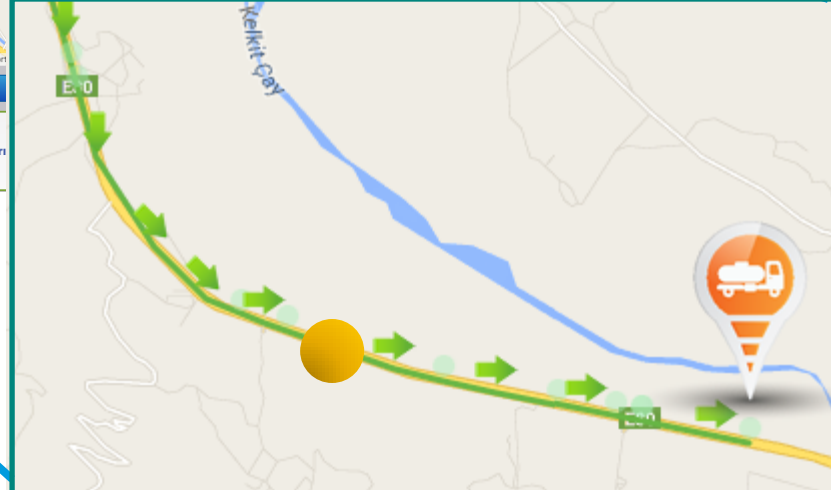
Kontakt Açık

Map Satellite



Auto Zoom

Map data ©2016 Google Terms of Use Report



- A complete transformation of the daily operations supported by the web application
- Integrated systems for the fleet tracking and facility tracking on one application
- Enable their customers to have access on the monitoring system
 - Transparent operation
 - Customer can observe their usage patterns
 - Use this as a competitive advantage over the opponents
- Reliance on the IoT technology builds **up so fast that the entire organization cannot handle offline operations.**
 - This is both good and bad !!
 - The IoT system needs to be backed up by redundant components - HA

THANK YOU !