



Trend analyse (veiligheids)metingen

4-11-2015



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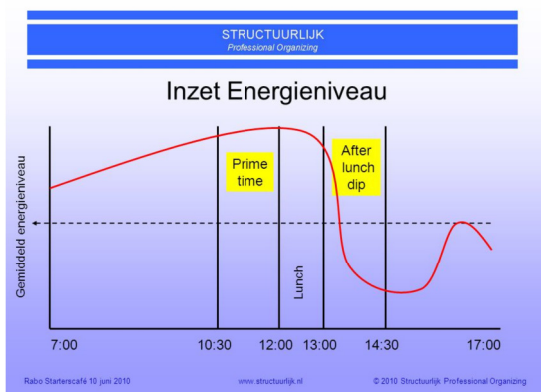


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Agenda

- Figures and Facts
- Aanleiding
- Ansur overtime
- Eerste ervaringen
- Trends – Stip op de horizon
- Vragen

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Figures

Erasmus MC



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Facts

- Ultimo als OBS,
- Biotek / Fluke voor meet en testapparatuur,
- 9+ teams (ca. 70 fte)
 - Decentrale technici (IC/OK) die eigen meet- / testapparatuur hebben,
- Ca. 36.000 objecten MT
 - Ca. 70 "test devices"

[illegible]

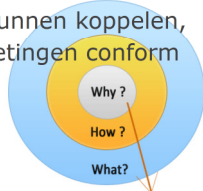
Weighted average cost of capital	12.00%
Cost of debt	7.00%
Cost of equity	13.00%

Aanleiding

Initiatief vanuit een Lean traject met de technici,

Vraagstelling: "Kunnen we het proces rondom meet & testdata optimaliseren"

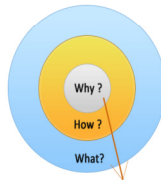
- Voor de technici waren er nl. veel stappen om:
 - data op te slaan,
 - aan een object te kunnen koppelen,
 - evaluatie van de metingen conform IEC 62353
 - en...



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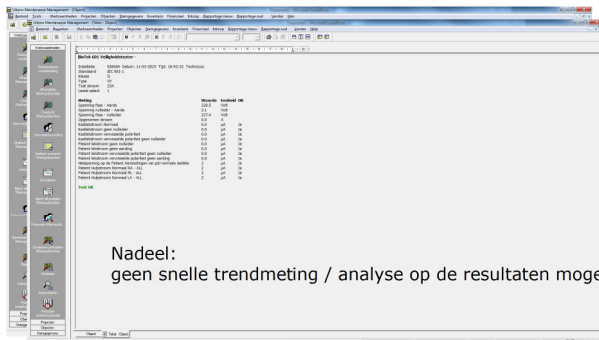
Waarom

- Waarom doen we een meting,
 - gebruikte technologieën in medische apparatuur is in de afgelopen decennia sterk verbeterd,
- Wat doen we met de "data" / wie doet er wat met deze data,
- Analyse van metingen,
 - Appels met appels maar dan wel Elstar met Elstar



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Uitgangssituatie (<Q1-2015)



Nadeel:
geen snelle trendmeting / analyse op de resultaten mogelijk

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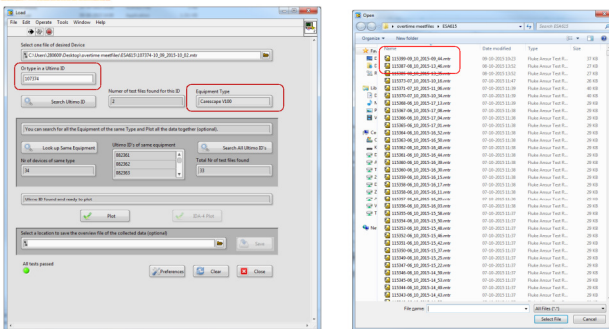
>Q2-2015 Meetresultaten (Veiligheidsmeting) in Ultimo



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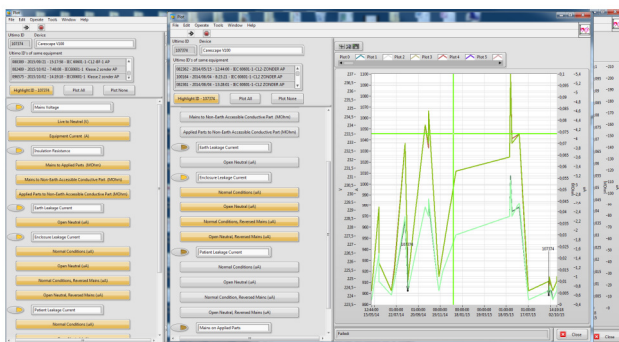
Ansur - overtime

LabVIEW 2013



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Ansur - overtime



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Export naar Excel

Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric tons)	Country	Year	Emissions (in millions of metric 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Eerste ervaringen

- Tijdswinst / efficiëntie in proces / werkzaamheden behorende bij de verschillende metingen,
- Mogelijkheden voor trendanalyse, Grafisch / excel
 - Statistisch is het lastig om een trend op basis van één object te bepalen,
 - (Gemiddelde life-time van een device is 10 jaar, met gemiddeld 1 meting per jaar = 10 metingen. Vandaar op type)
- Belangrijk om een "nul" meting als referentie meting te doen,

Vanuit de Lean analyse



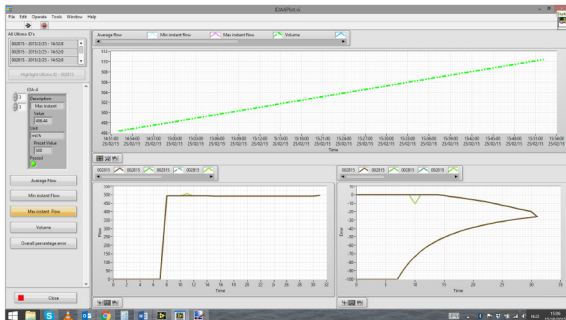
Was:

- Opslaan van:
 - Pdf en CSV en MTR,
- Meerdere (verschillende) handelingen door de technicus voor import en viewer,
- Geen standaard werkwijze voor bekijken van meet resultaten,
- Geen mogelijkheid voor snelle TREND analyse,

Nu:

- Standaardisatie op Fluke ESA-615 en 620
- Opslaan van alleen MTR,
- Vanuit Ultimo direct kunnen openen van Ansurs als viewer,
- Gebruik van ontwikkelde tool voor vergelijking van meetresultaten, op basis van MTR
- Uitgangspunt voor nieuwe analyse /vergelijkingen,
 - IDA. ESU

Analyse met IDA gegevens



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Trends - Aandachtspunten

- Zelfgebouwde applicatie,
 - Op dit moment is er (voor zover bij ons bekend) nog geen geborgde applicatie,
- Bij een **defect** met als resultaat een "foutieve" meting, moet de technicus de meting ook opslaan,
- Afspraken bij **extern** onderhoud tbv meetresultaten,
 - Wie doet hierbij de analyse?
- *Samenwerken* vanuit bv. type en MTR om een nog beter beeld te kunnen krijgen,



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Stip op de horizon



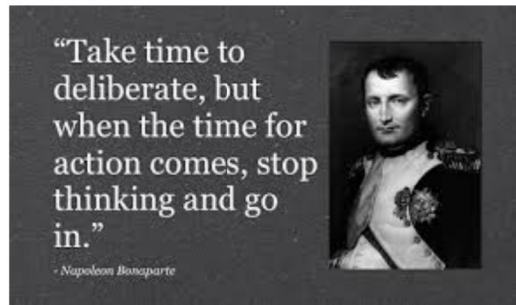
- Geïntegreerde analyse tool,
 - Direct vanuit de bron (geen conversies),
- Uniformiteit in output van de (veiligheids) testers,
 - nomenclatuur is immers conform IEC 60601 / 62353,
- Uniformiteit in dataset (IHE) van testers onderling,
 - IEEE-488 => IEC 60488-1
 - (Standard for Higher Performance Protocol for the Standard Digital Interface for Programmable Instrumentation - Part 1: General)

HP Interface Bus (HP-IB)
1960



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Bedankt voor de aandacht



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