

# Plant & ERP integration - Eksempler

Lars Bjørn Christensen, NNE Pharmaplan

Bo Ottosson, Bentley



# Agenda

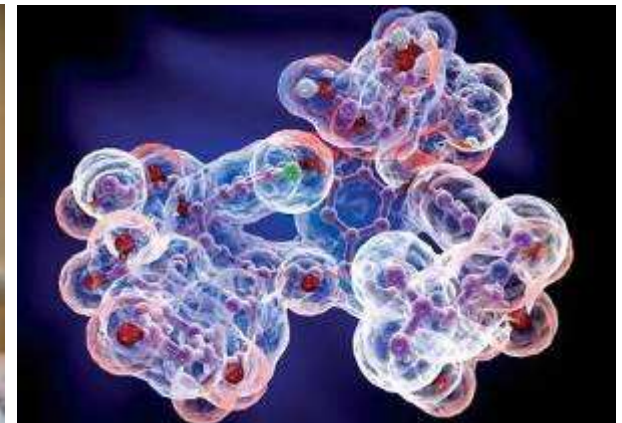
nne pharmaplan®

- Lidt om NNE Pharmaplan
- Integrationsmuligheder
- Eksempler
- Spørgsmål

# NNE Pharmaplan at a glance

nne pharmaplan®

- Over 80 years of experience in the **pharma** and **biotech** industries
- Spanned over **3 continents** across Europe, North America and Asia
- Workforce 2009: More than 1500
- Turnover 2008: DKK 1.668M, €224M, \$309M
- **ISO 9001** certified since 1997; certified worldwide in 2008
- **ISO 14001** certified since 2003
- **OHSAS 18001** certified since 2003
- Winner of the ISPE award "**Company of the Year 2008**"



# Global reach - local **knowledge**

nne pharmaplan®



# Focus makes all the difference nne pharmaplan®

- Clear **focus** on the **pharma** and **biotech industry** through our
  - Highly-skilled experts
  - Advanced working methods and tools
  - Top range industrial quality standards
- Strong **expertise** in all major **process technologies** for the production of
  - APIs
  - Biotechnological products
  - Sterile dosage forms
  - Non-sterile dosage forms
  - Medical devices
- Strong **GMP know-how**
- In-depth knowledge of **current technologies** and continuous focus on **state-of-the-art advances**

# Secondary manufacturing

nne pharmaplan®

## Germany

New processing facility for cytotoxics.



## South Korea

Modular facility for filling of vaccines.



## France

Pharmaceutical facility for production of vials, ampoules and cartridges.



## Switzerland

Facility for aseptic filling of vials and syringes.



## Germany

GMP-upgrade of an existing facility for the production of non-sterile dosage forms.



## US

Design and Validation of new filling line including formulation, storage and fill/finish.



## Russia

New production facility for infusion solutions in PCV bags.



## China

New high-containment production facility for sterile and non-sterile dosage forms.



# API

nne pharma plan®

## Switzerland

Pilot facility for high potent API manufacturing.



## Norway

GMP-Design, Validation, Doubled capacity, Construction management and Process optimisation.



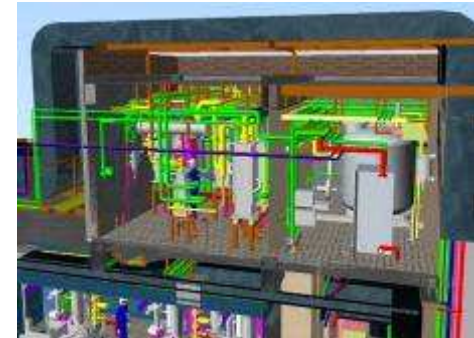
## Denmark

Fast-track for omega 3 production.



## Czech Republic

High potent facility for APIs in an existing building.



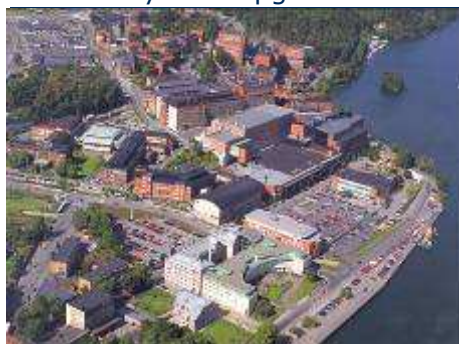
## India

New multi-purpose production facility for cytotoxics.



## Sweden

API Plant, BioPharma Conceptual Design and Control System Upgrade.



## Sweden

Master plan and CD for a capacity expansion for peptide production.



## Iran

New pilot and production line for dry herbal extracts.



# Biotech

nne pharmaplan®

## Denmark

Insulin Bulk Plant.  
The largest insulin production facility in the world



## Finland

Cell-culture manufacturing plant based on disposable process technology.



## China

Establishment of a new enzyme plant



## Worldwide

Yearly qualification services



## Germany

New GMP-laboratory production facility for cell therapeutics



## US

Greenfield large scale fermentation, recovery and granulation plant



## Malaysia

New multi-purpose biotech facility, modular building design



## Denmark

Vaccine facility built in 11 months





# Medical device references

nne pharmaplan®

## Czech Republic

New production facility for the manufacturing of blood bags in an existing building.



## Abu Dhabi

Production facility for the manufacturing of auto-disable syringes (own patent).



## Worldwide

GMP-compliance services.



## Switzerland

Complete production facility for biomaterials.



## Denmark

Production strategy and design for manufacture (DFM) study for a high volume disposable medical device.



## Denmark

Plant for production of reusable devices



## Uzbekistan

Production facility for syringes, infusion and transfusion sets.

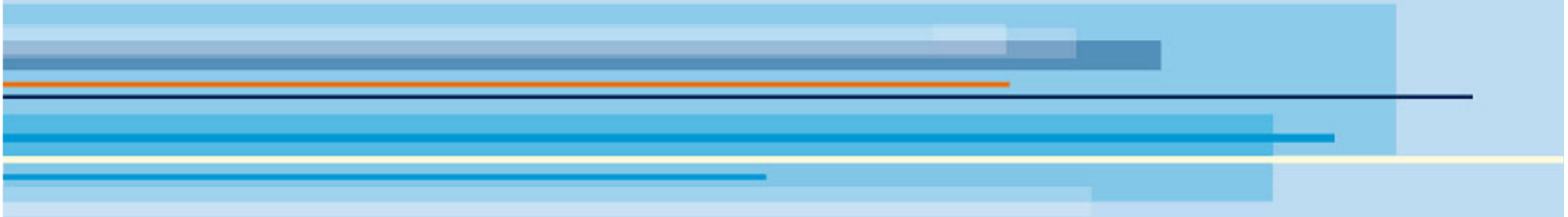


## Sweden

Two complete turnkey cleanroom facilities. Mock-Up Inspection of facilities.



# Plant & ERP integration - Eksempler



# Integrationsmuligheder, Niveauer

rne pharmaplan®

Der er 3 niveauer hvorfra man kan integrere fra Plant Design:

- CAD level
- Application level
- Managed environment

På ERP siden er der en række områder:

- Material management
- Plant Maintenance
- Purchasing
- HR

# Integrationsmuligheder, Spørgsmål

- Hvorfra skal integrationen styres:
  - Projekt siden
  - Drift/vedligehold side
- Dataflow:
  - Ren handover
  - Synkronisering
    - Hvilket er det ledende system
    - Hvor ofte skal data synkroniseres

# Integrationsmuligheder, Udfordringer

nne pharmaplan®

Forskelle i tilgang og anvendelse af data:

- Engineering:
  - Fleksibelt
  - 'Mange' ændringer
  - 'Sjældent' behov for audit trail
  - Gode bruger interfaces
- ERP samt Drift & Vedligehold
  - 'Ufleksibelt'
  - 100% audit trail
  - 100% dokumentation af ændringer
  - Besværligt bruger interface



# Integrationsmuligheder, „Application level“ eksempler

nne pharma plan

<b>Plant Domain</b>		<b>ERP Domain</b>
Komponentdata	↔	Indkøb
Komponentdata	↔	Vedligehold
Designdata	↔	Produktion
Designdata	↔	Planlægning
Systemdesign	↔	Drift (CTS/SRO)

# Eksempler

nne pharmaplan®

- Fra Bentley
- IFS integrationer (Bo Ottosson, Bentley)
- Fra Plant til SAP ERP
- NNE Pharmaplan: Fra AutoPLANT til sap maintenance

## Eksempler fra Bentley

- BP konsoliderer engineering data i PW LifeCycleServer, som opdaterer Maximo maintenance.
- Aker Process anvender data fra Plant Design til at opdatere SAP
- Shell Køl n tager materiale data fra SAP ind i Specs og Isometrier – Ingen data sendes tilbage.



# IFS integrationen

nne pharmaplan®

- Bo Ottosson, Bentley

# Firma XXX

nne pharmaplan®

## Komponent spec data ↔ SAP ERP

Opgave:

- Sikre at komponenter anvendt i Plant Design matcher emner i SAP ERP for indkøb
- Metode:
  - Alle komponenter oprettes i SAP ERP med fortløbende 'SAP nummer'
  - Alle komponenter i Plant-Specs tilføjes samme 'SAP nummer'

**XXX**

nne pharma plan

## **Komponent spec data ↔ SAP ERP**

Udfordringer:

- Oprette nummer både i SAP og i Plant Spec
- Manuelt sikre at SAP nummer matcher Plant nummer
- Hvis der op står fejl kan følgende opstå:
  - Designer vælger 2" Tee – Der bliver bestilt 40" duplex rør
  - Designer vælger 2" Tee – Der bliver bestilt 1 par gule gummistøvler



# NNE Pharmaplan

## Komponent data ↔ Vedligehold

nne pharmaplan®

Opgave:

- Anvende komponent data som grundlag for Drift & Vedligehold i SAP maintenance system.
  - Automatiseret load af data
  - Indlægning af kundens egne data inden load til SAP
  - 'Right first time'
- 
- Metode
    - Plant database mappes mod SAP database
    - Plant data overføres til en SAP klon, hvor data kan tilføjes
    - Data loades ind i SAP fra SAP klon.



# NNE Pharmaplan

## Komponent data ↔ Vedligehold

nne pharmaplan®

Udfordringer:

- Enighed om struktur af data –  
Kundens struktur er 100% fast/låst
- Enighed om omfang af data –  
Hvilke attributter til hvilke komponenter
- Relevans af de enkelte data er meget forskellig for  
engineering og drift
- Validering af korrekt  
dataoverførelse
- SAP installation dækker  
adskillelige anlæg på en site.



# NNE Pharmaplan

## Komponent data ⇔ Vedligehold

Data mapping mellem  
PL og sap  
1 .xls per  
komponenttype

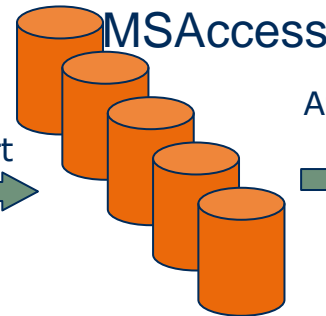


Oprettelse  
af tabeller



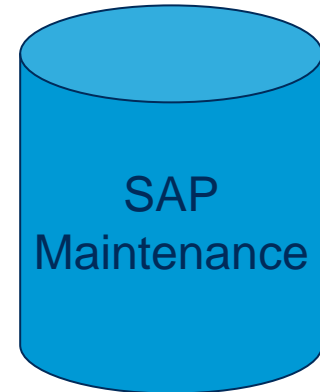
Fælles database for  
lagring af setup,  
queries, historik mv.

Export

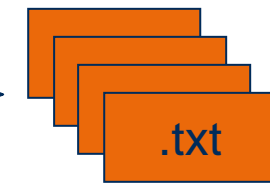


Tabeller med samme  
format som sap, bla.  
for data validering

Aflevering til  
kunde

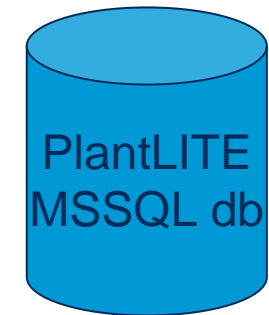


import i sap



Txt filer  
til import i sap

tilføjelse af  
bruger data

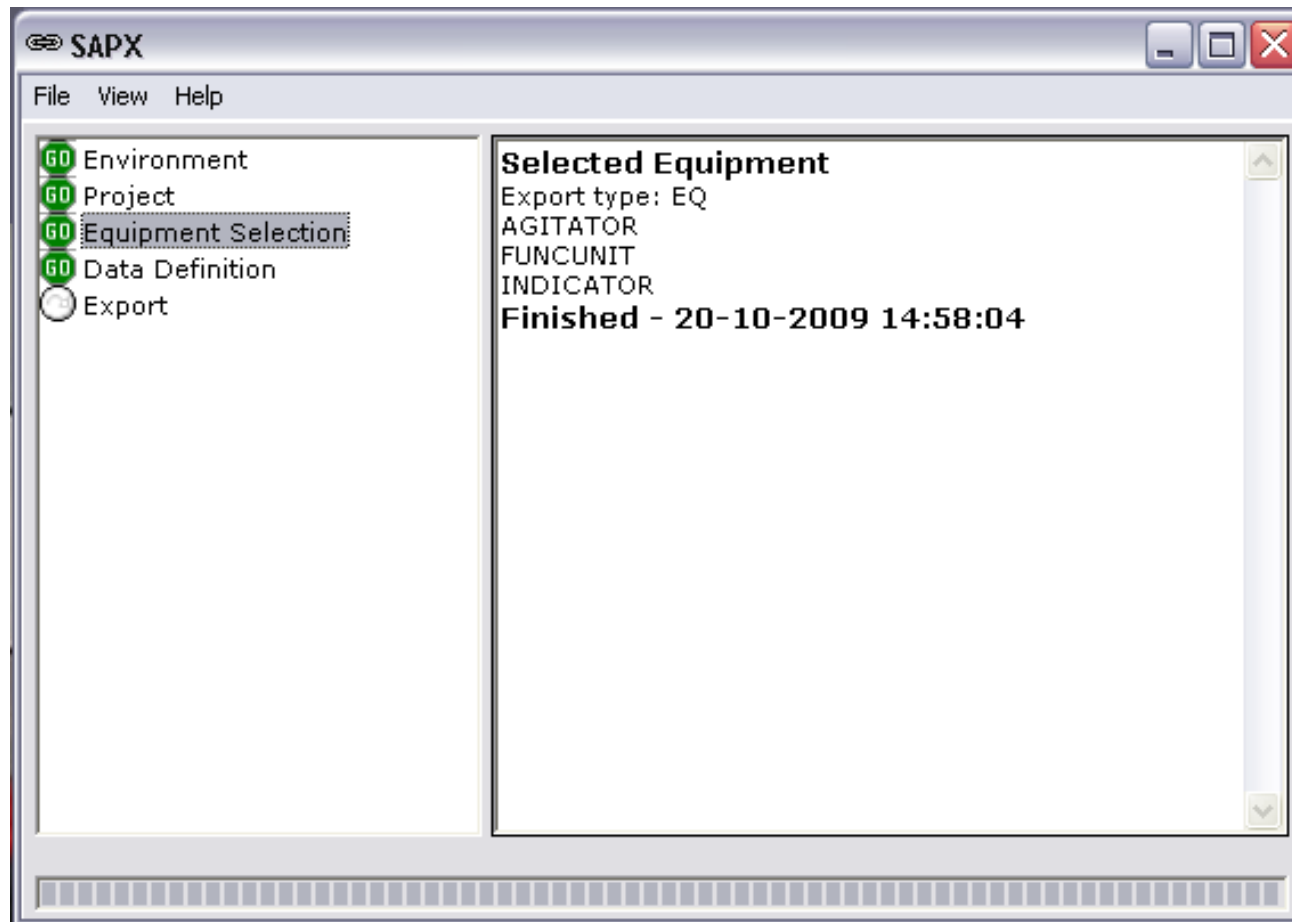


Engineering Tool  
baseret på APlant  
22

# NNE Pharmaplan Komponent data ↔ Vedligehold

nne pharmaplan®

Brugerflade:



# NNE Pharmaplan

## Komponent data ↔ Vedligehold

nne pharmaplan®

Mapping af Plant data og SAP data:

The screenshot shows a Microsoft Excel spreadsheet titled 'Microsoft Excel - FL\_Pumpe.xls'. The spreadsheet contains a table with 5 columns: A, B, C, D, and E. The table lists various SAP characteristics and their corresponding SAP data types and sizes. The 'Source fieldName' column (D) contains values like 'Tag No', 'Room no', and 'P&I Diagram'. The 'Default value' column (E) contains values like 'ILO1', 'IBIPFLOC', 'A', 'Pumpe', '25K', and 'HI 25K 7 23'.

	A	B	C	D	E
1	SAP Characteristic	SAP Type	SAP Size	Source fieldName	Default value
2	Transaction code	Text	20		ILO1
3	IBIP: Name of the data transfer record	Text	30		IBIPFLOC
4	FunctLocation	Text	30	Tag No	
5	StructIndicator	Text	5		A
6	FunctLocCat	Text	1		
7	RefLocation	Text	30		
8	Description	Text	40		Pumpe
9	MaintPlant	Text	4		
10	Location	Text	10		25K
11	Room	Text	8	Room no	
12	Plant section	Text	3		
13	Work center	Text	8		
14	ABC indicator	Text	1		
15	Sort field	Text	30	P&I Diagram	HI 25K 7 23
16	Company code	Text	4		
17	Main asset number	Text	12		
18	Asset sub-number	Text	4		
19	Business area	Text	4		
20	Cost center	Text	10		
21	WBS element	Text	24		
22	Standing order number	Text	12		
23	SupFunctLoc	Text	30		
24	ConstType	Text	18		
25	Installation allowed	Text	1		