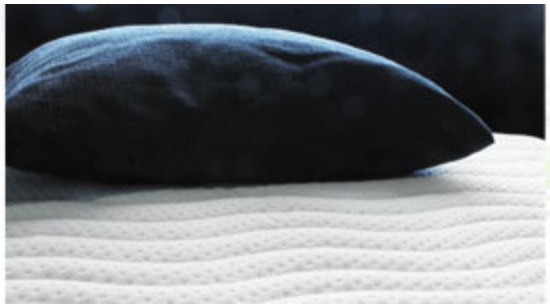
SESAM nr. 104 seminar

Indførelse af produktions it og automation

2013



Giving the world a good night´s sleep™

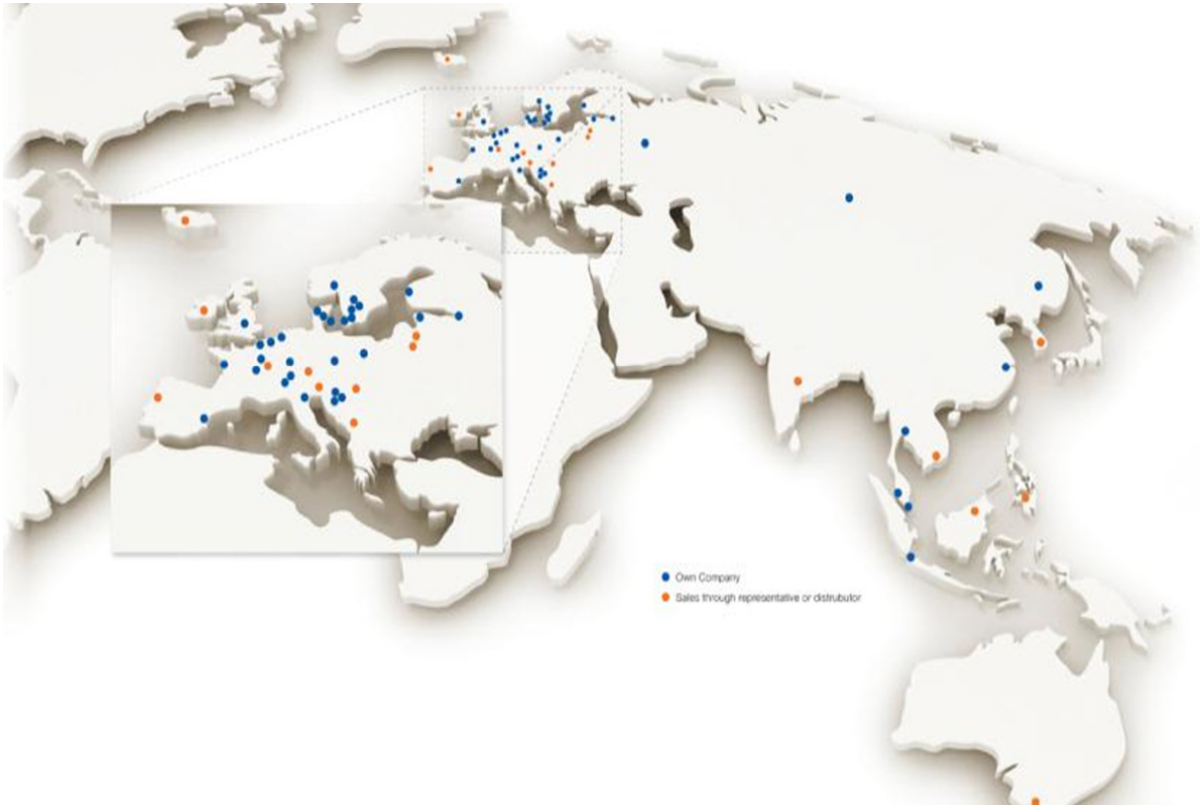
John Nielsen

Topic

- Hvem er Hilding Anders
- Projekt scope (automation og produktions it og integration til ERP)
- Roller og ansvar i projektet
- Processen at automatisere og indføre MES
  - Gennemgang af teknisk setup – PLC, SCADA, MES og ERP
- Hvad er opnået i forhold til målsætning og forventede resultater - Fleksibilitet, sporbarhed, mm.

Giving the world a good night´s sleep™

The Group in overview



Key data (in M€)	
Head office	Malmö
CEO & President	Anders Pettersson
No employees	7,600
Net Sales	851
EBITDA	122

Business Concept

- Providing bedding solutions for furniture retailers both branded and as private label
- Penetrating business opportunities in emerging markets through own investments in the retail trade

Strategic position

- Hilding Anders is the undisputed leader in Europe
- Investing into growth opportunities in Russia and SE Asia

Entrepreneurial spirit since 1939

1939 — Company founded by Hilding Andersson

1959 — Partnership with IKEA starts

1979 — Partnership with Jysk starts

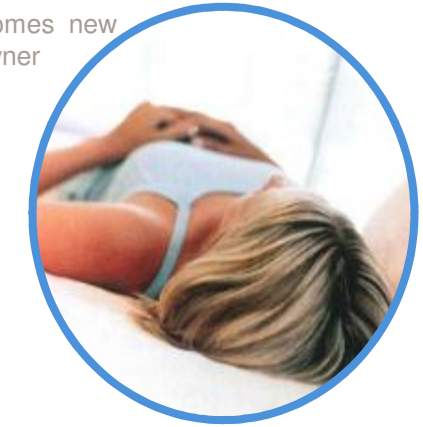
1991 — First acquisition Ekens Fabriker in Sweden

1999 — Leading bed and mattress manufacturer in the Nordics

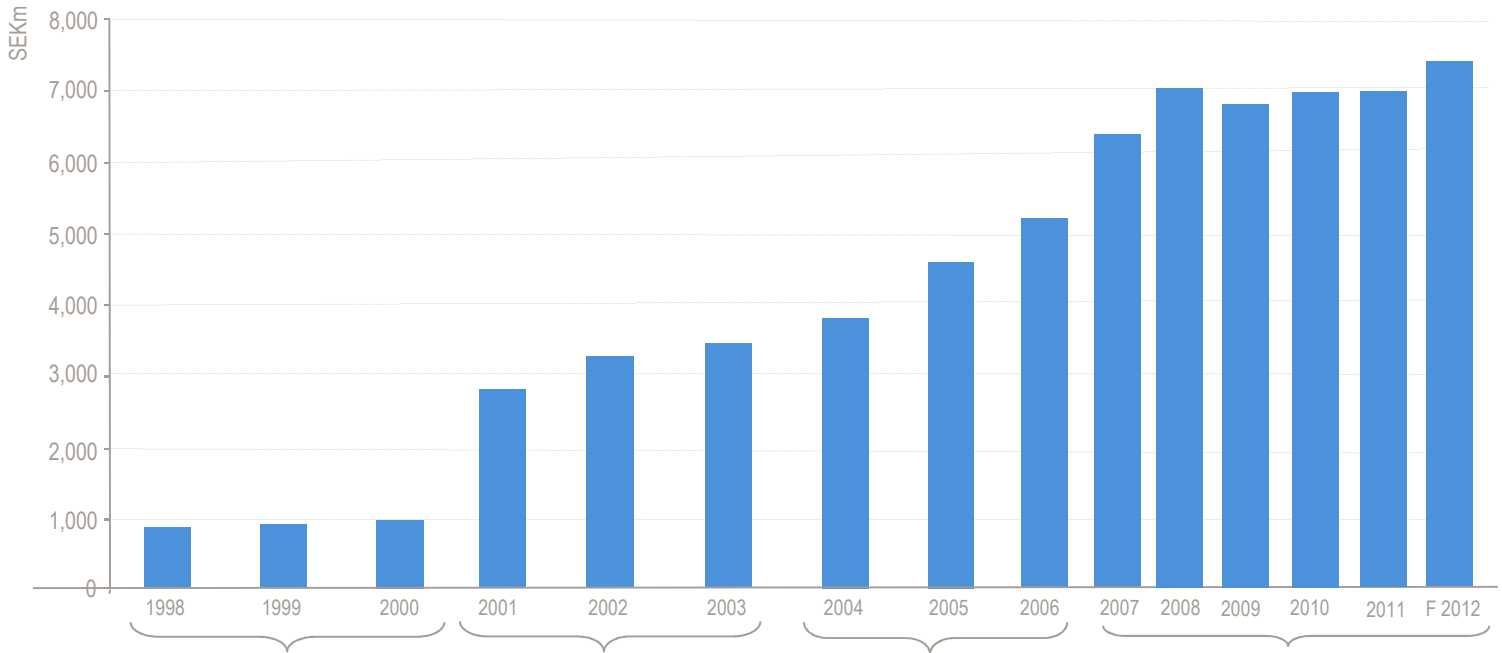
2001 — Leading bed and mattress manufacturer in Europe, entry into Asia

2006 — Arle becomes new owner

2010 — Leading European Player through acquisition of Askona in Russia



Three major growth steps



Nordic Consolidation | Europ. Ccnsolidation followed by continued expansion in Russia and Asia

Hilding Anders Danmark A/S

- Hilding Anders Danmark A/S er opstået pr. 1. januar 2007 som resultatet af fusion mellem Carl Thøgersen A/S og Scandi Sleep A/S. I 2010 opkøbtes Dunlopillo A/S og blev fusioneret ind i Hilding Anders Danmark. Endelig overgik salget af Jensen på det danske marked i 2012 til også at ske fra Hilding Anders Danmark A/S i stedet for som tidligere fra Jensen Madrasser ApS.
- Det er dog først fra 1. januar 2013, at Hilding Anders Danmark A/S også rent driftsmæssigt opererer som 1 organisation med en fælles ledelse.

The Hilding Anders Spirit

Olle Andersson in December 2011
Founder and CEO (1957-87):

- ‘Always stay ahead’
- ‘Grow faster than the rest’
- ‘If I made one bad deal I had to compensate with two good ones’

Project Scope

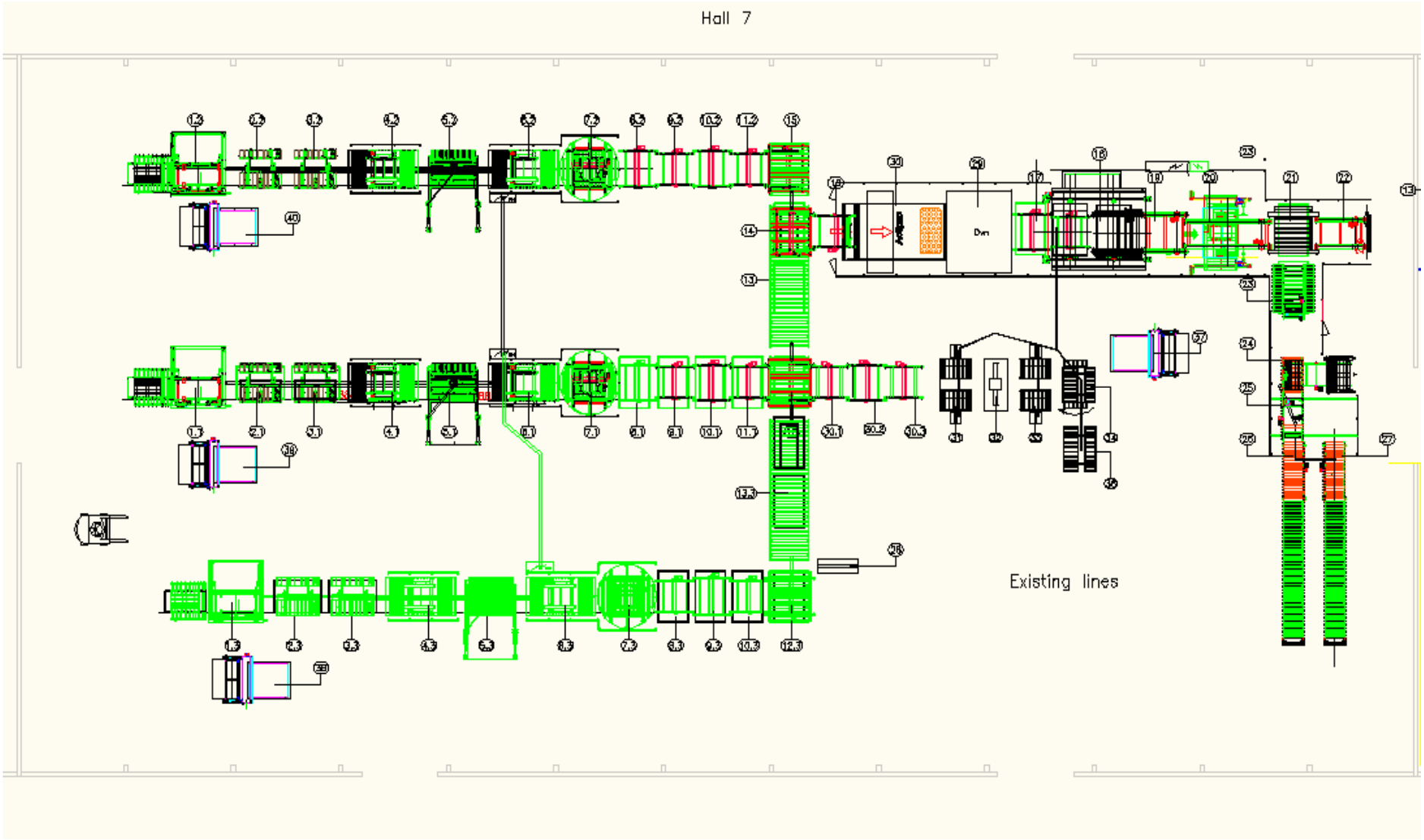
Scope of work - objectives

- Improve productivity in box line production
  - Develop improvements in relevant processes
  - Improve material handling
  - Improve flexibility to handle several product ranges
  - Develop new flow and lay outs
  - Implement ergonomic correct workplaces - height adjustable
- Double capacity to min. 1250 “average” units pr shift
- Introduce competitive automation level
- Introduce Lean Thinking in all operations

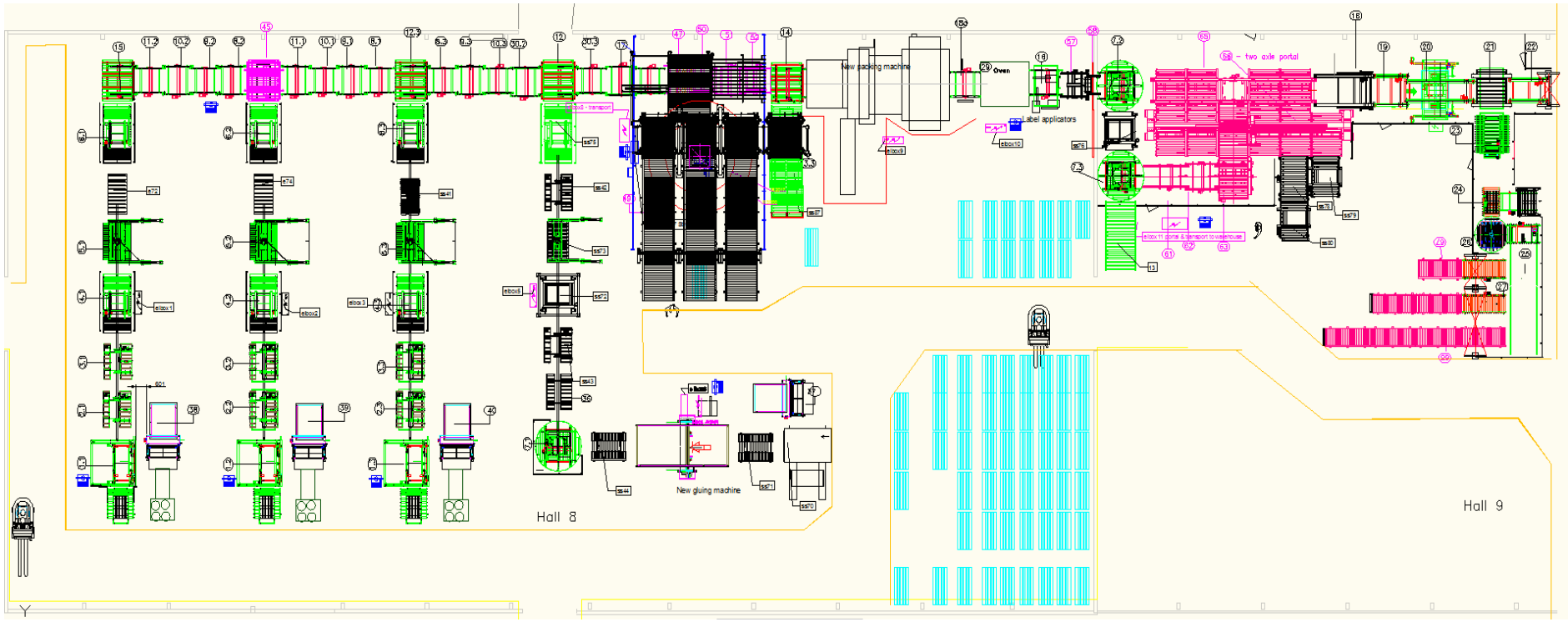
The challenge

- Integrate 2 factories into one with all necessary raw materials stored on site.
- Work at the factory was marred by poor flow and interaction.
- Ineffective material handling many workers collects necessary material
- Poor overview of how things were progressing.
- Quality defects too frequent.
- Raw materials were not always ordered in due time, leading to interruptions.
- To high stock levels
- Lead time was to long, generating a lot of WIP

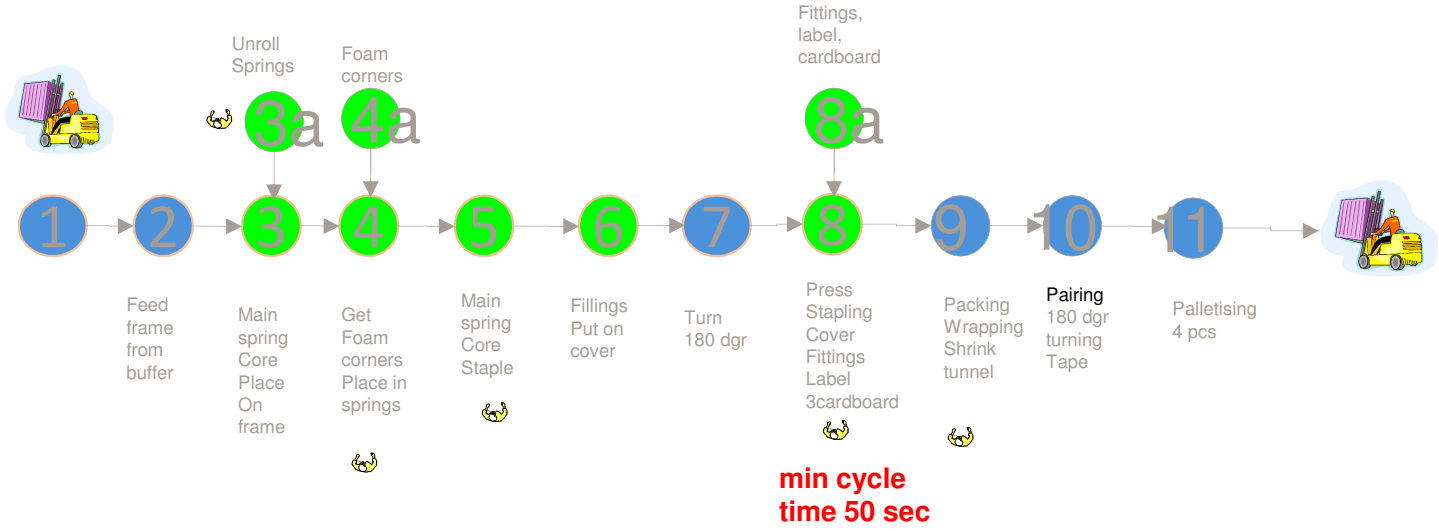
Existing lay out

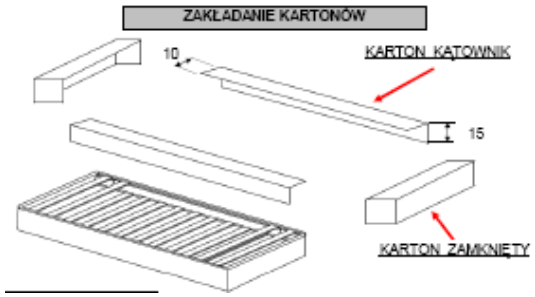


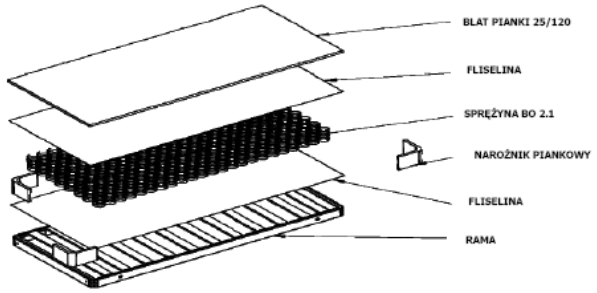
New lay out


New packing machine
Oven
Label applicators
two axle portal
New gluing machine
Hall 8
Hall 9

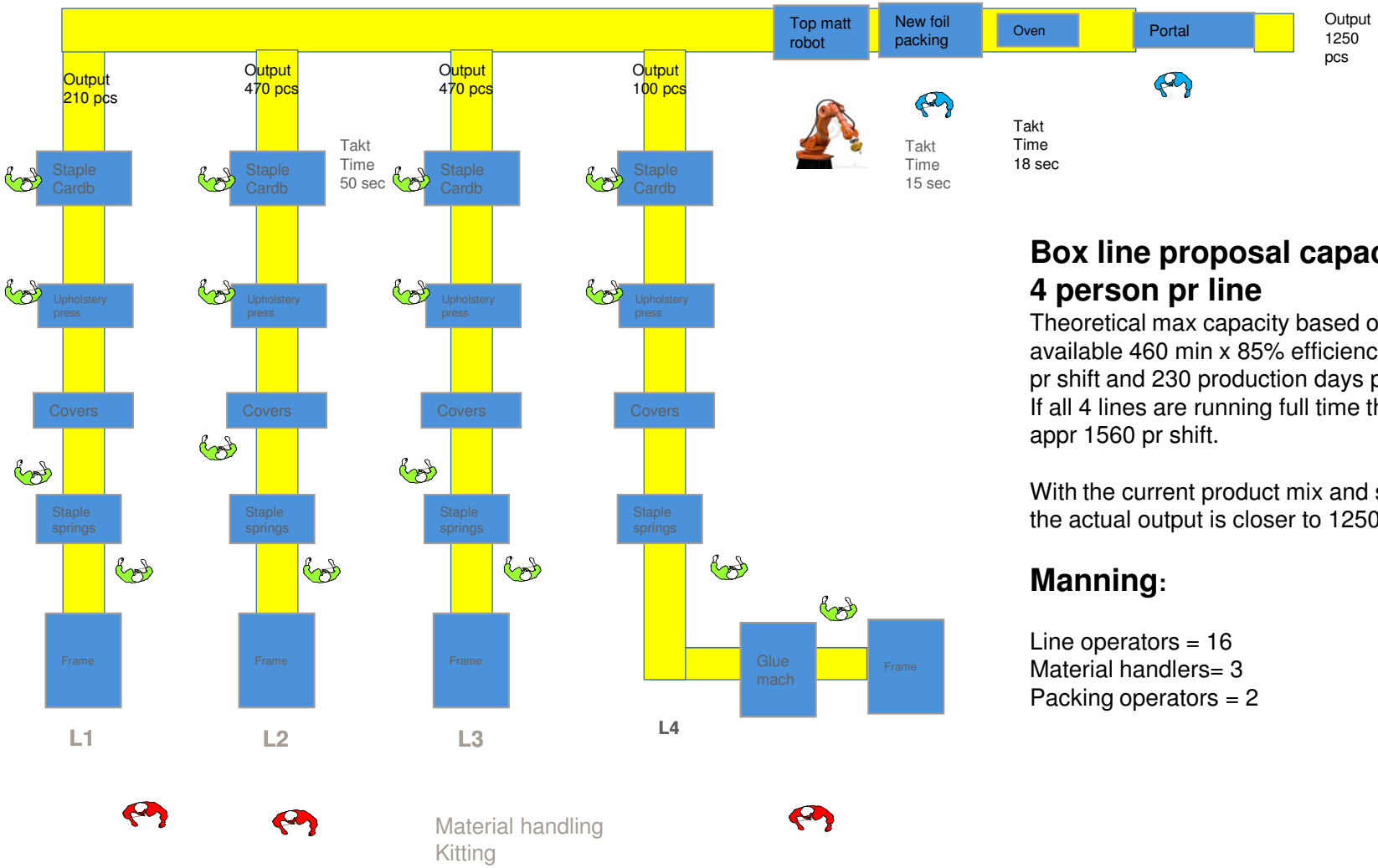
Process flow box mattresses







Box lines potential output pr shift 1560 = yearly volume 360.000 mattresses



Box line proposal capacity with 4 person pr line

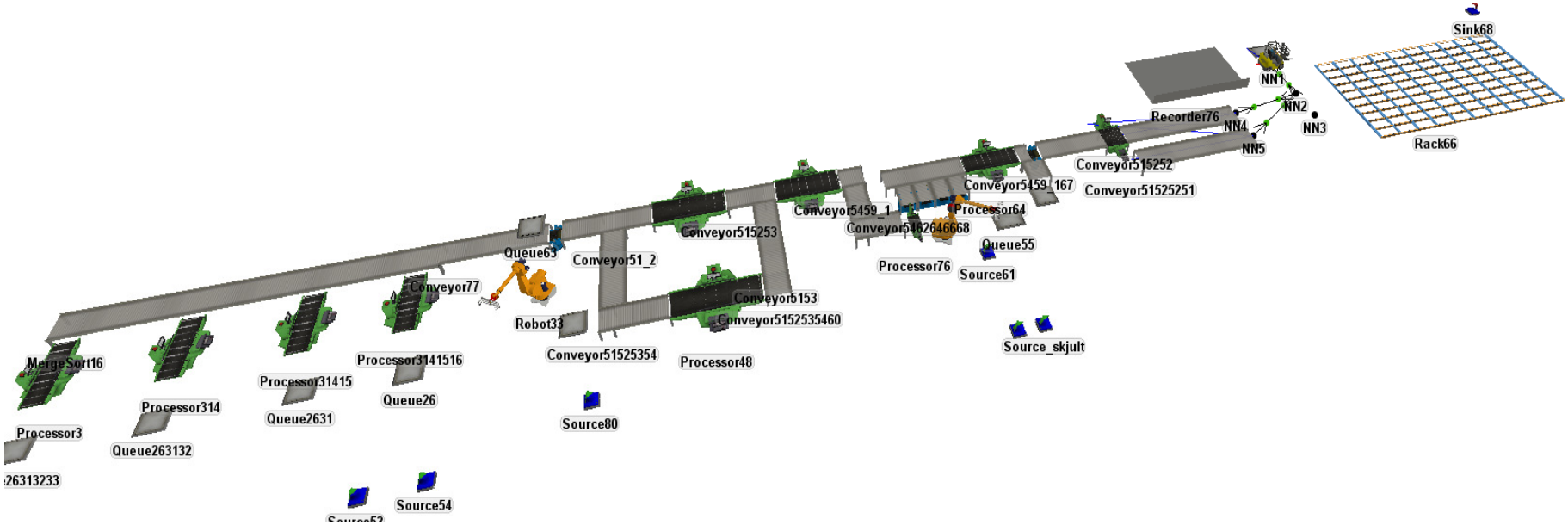
Theoretical max capacity based on using available 460 min x 85% efficiency = 390 min pr shift and 230 production days p.a.
If all 4 lines are running full time the capacity is appr 1560 pr shift.

With the current product mix and small batches the actual output is closer to 1250 pcs pr shift.

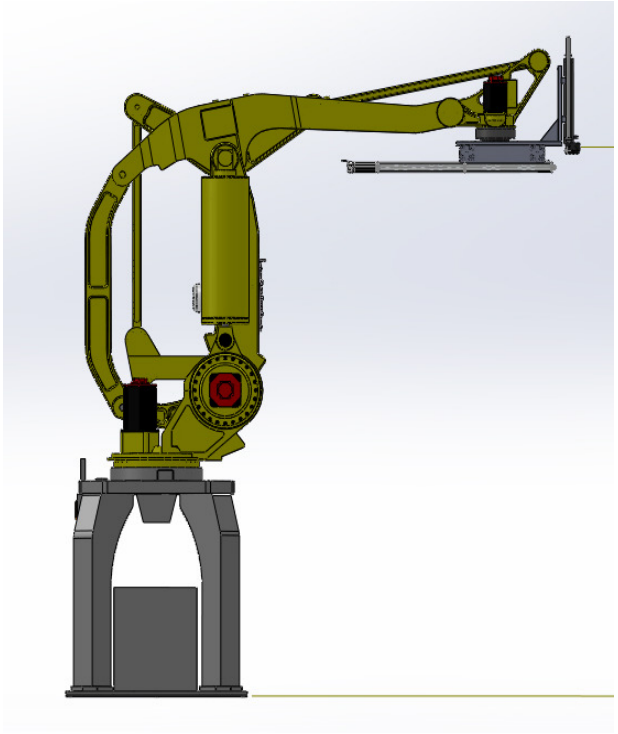
Manning:

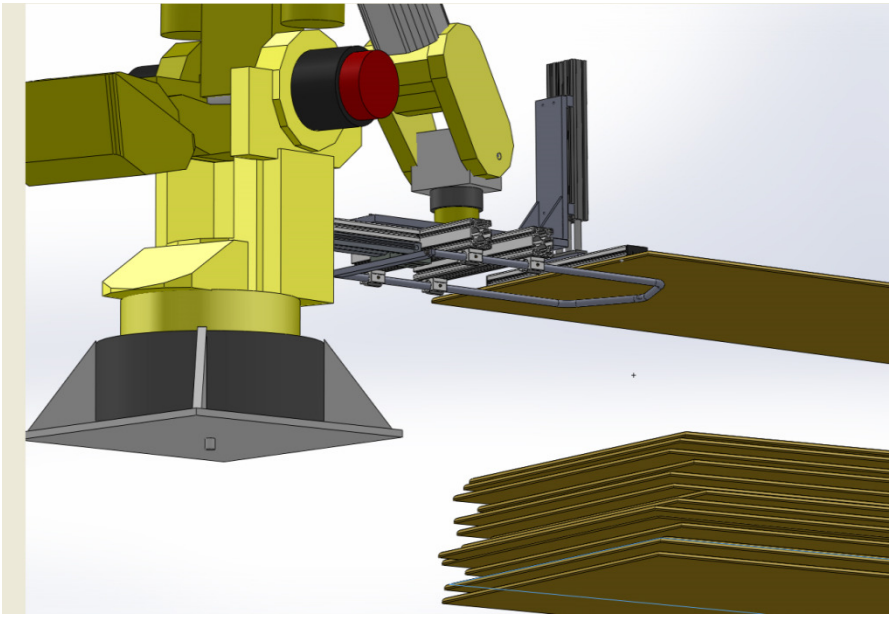
Line operators = 16
Material handlers= 3
Packing operators = 2

Simulation and engineering process based on Lean principals



Robotic system to handle top mattresses





Performance measurements KPI Dashboard to be implemented

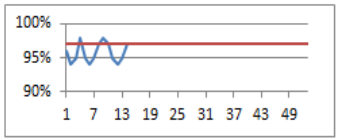
weeks registered 14

Vision

Quality

Througput yield

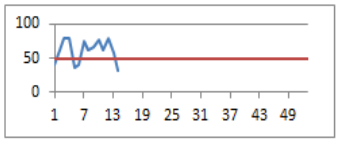
W 14	YTD	Target	2012
97,0%	95,7%	97,0%	96,5%



Output/Input

Returns

W 14	YTD	Target	2012
33	61	50	76

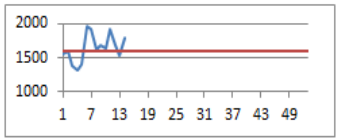


Units per week

Cost

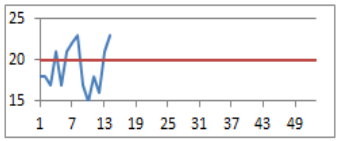
Mattresses per day

W 14	YTD	Target	2012
1783	1645	1600	1530



Labor effectiveness

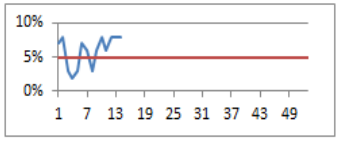
W 14	YTD	Target	2012
23	19	20	22



Minutes per mattress

Overtime

W 14	YTD	Target	2012
8,0%	5,9%	5,0%	8,0%

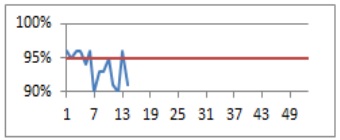


Share of total wages

Delivery

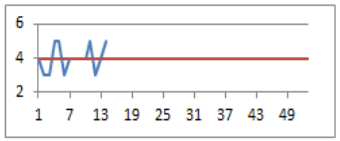
Delivery performance

W 14	YTD	Target	2012
91,0%	93,7%	95,0%	93,2%



Lead time

W 14	YTD	Target	2012
5,0	4,0	4,0	4,5

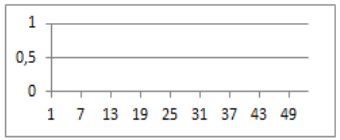


Hours

Safety

Injuries

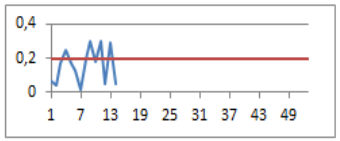
W 14	YTD sum	Target	2012
0	0	0	3



Per year

Near misses

W 14	YTD	Target	2012
0,1	0,2	0,2	0,4

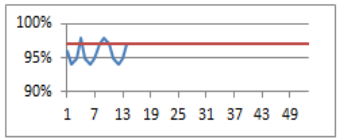


Per week

Moral

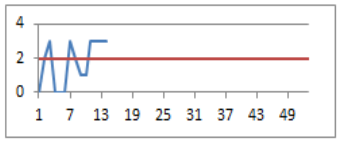
Daily attendance

W 14	YTD	Target	2012
88,0%	91,9%	94,0%	92,3%



Improvement suggestions

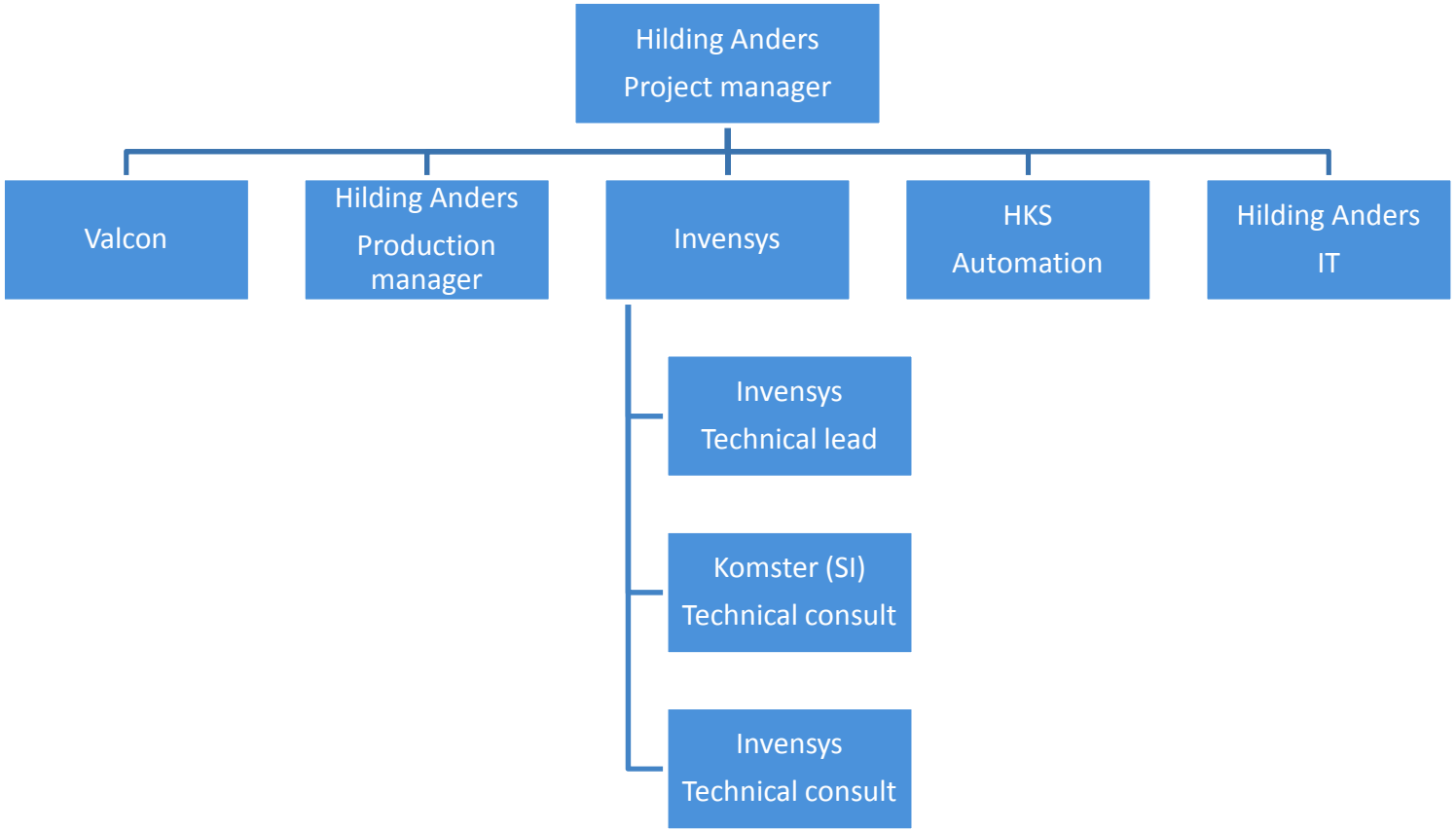
W 14	YTD	Target	2012
3,0	1,7	2,0	1,0



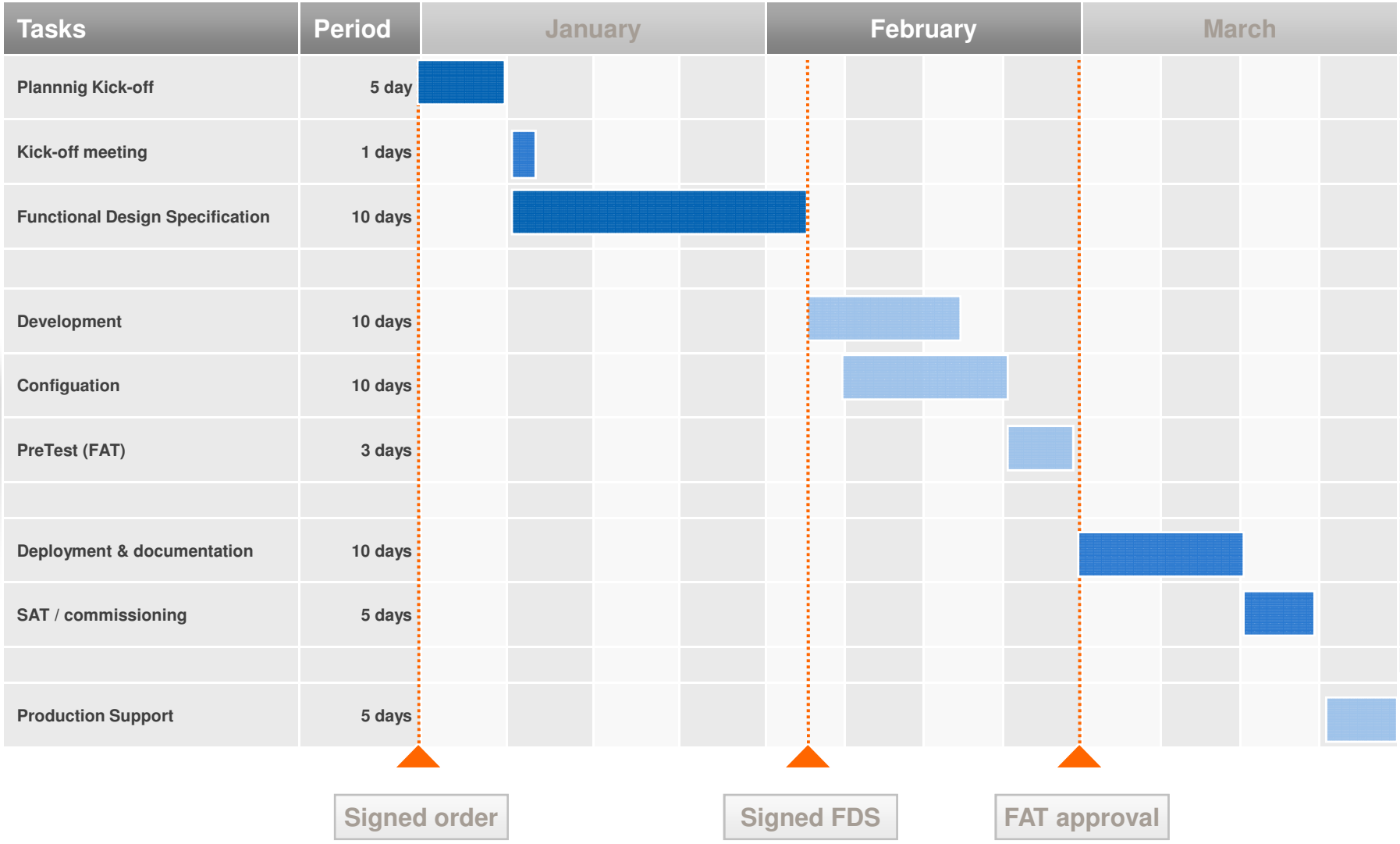
Per employee per week

Roller og ansvar i projektet

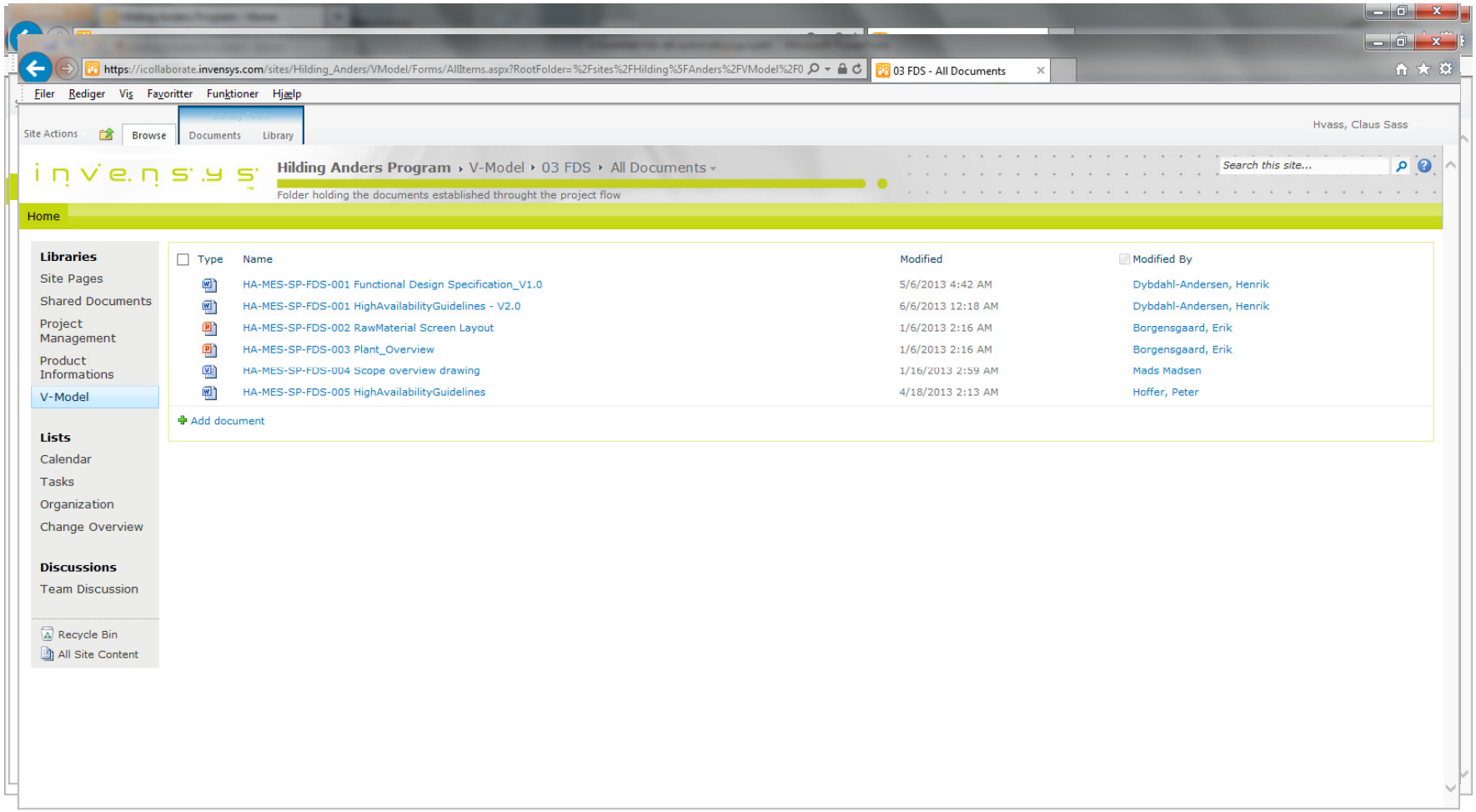
Project Organization



Project Scope - MES

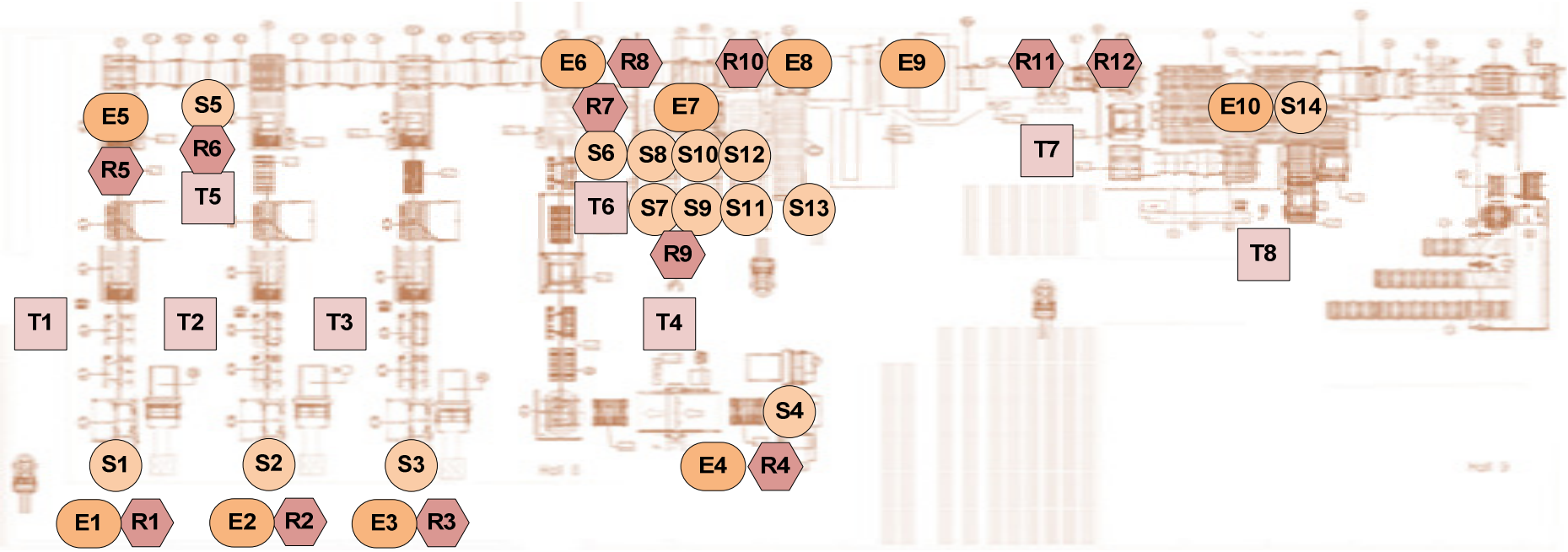


Requirement specification and handling requirements - MES



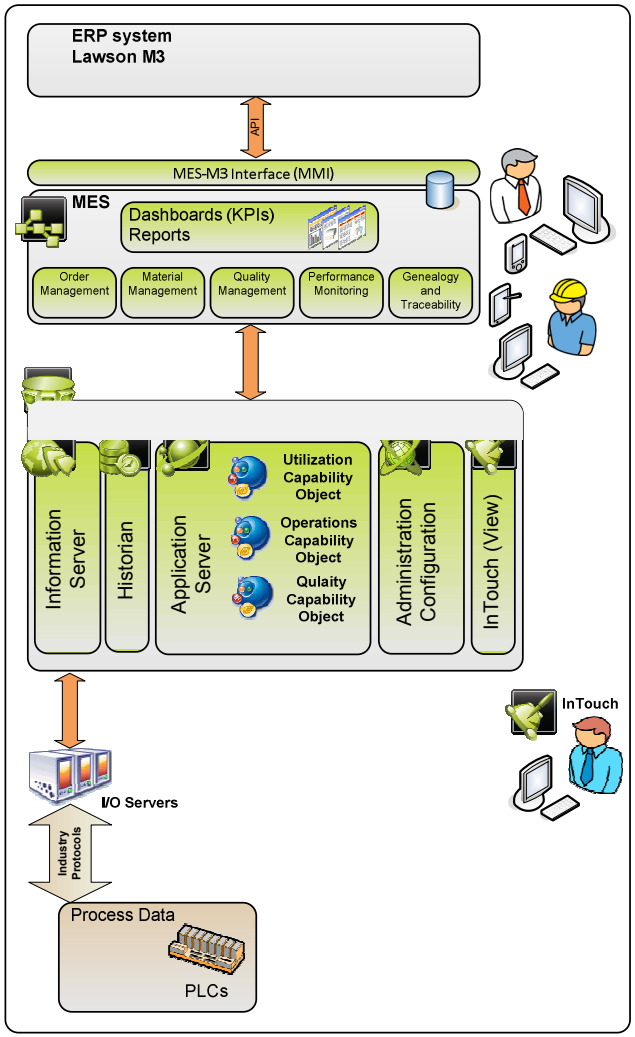
Processen at automatisere og indføre MES

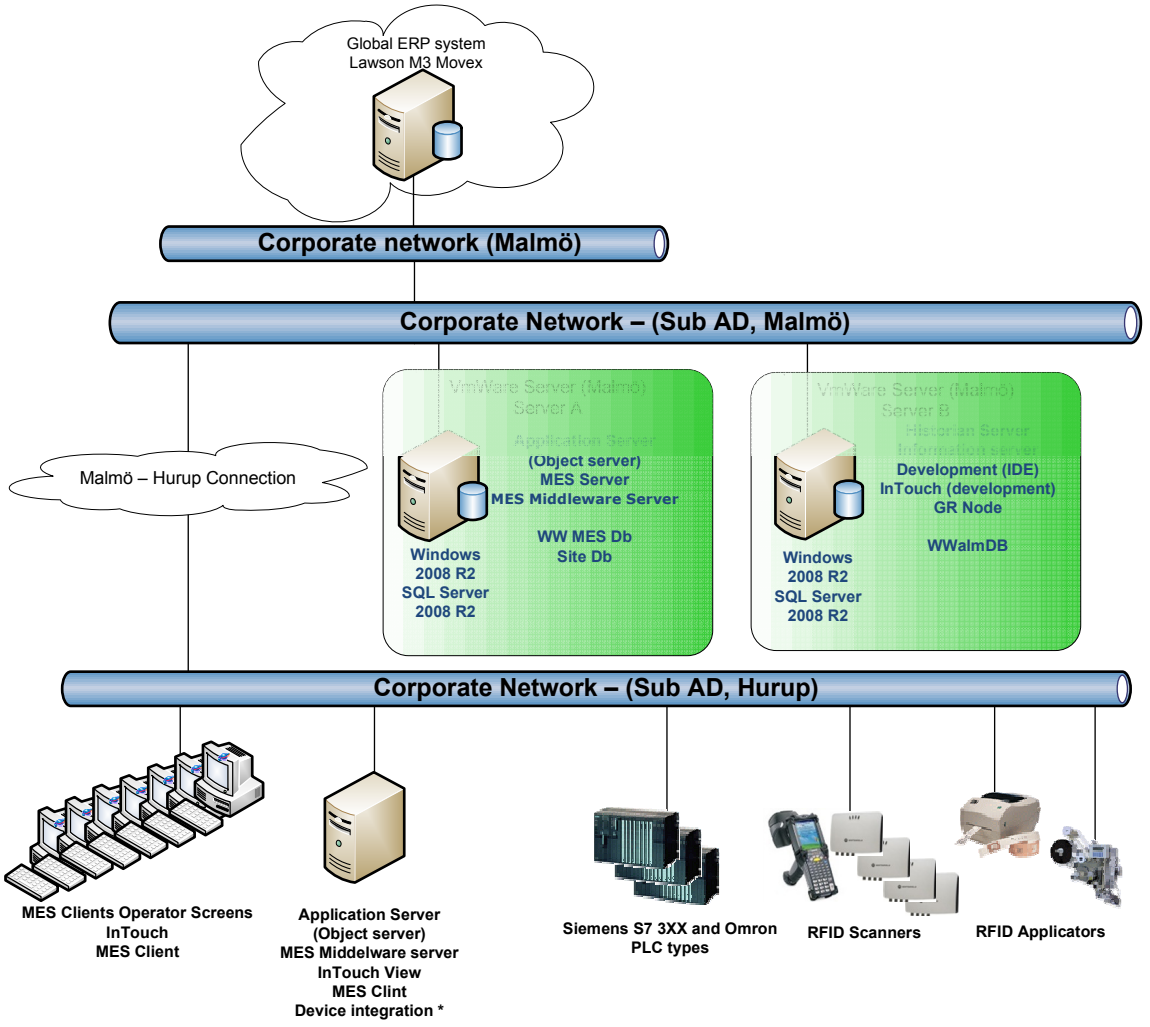
Advanced IT tools with RFID was necessary to control the system



E = Logic entities S = Storage locations
R = RFID Readers T = Operator terminals

Flow topology for the Wonderware MES solution



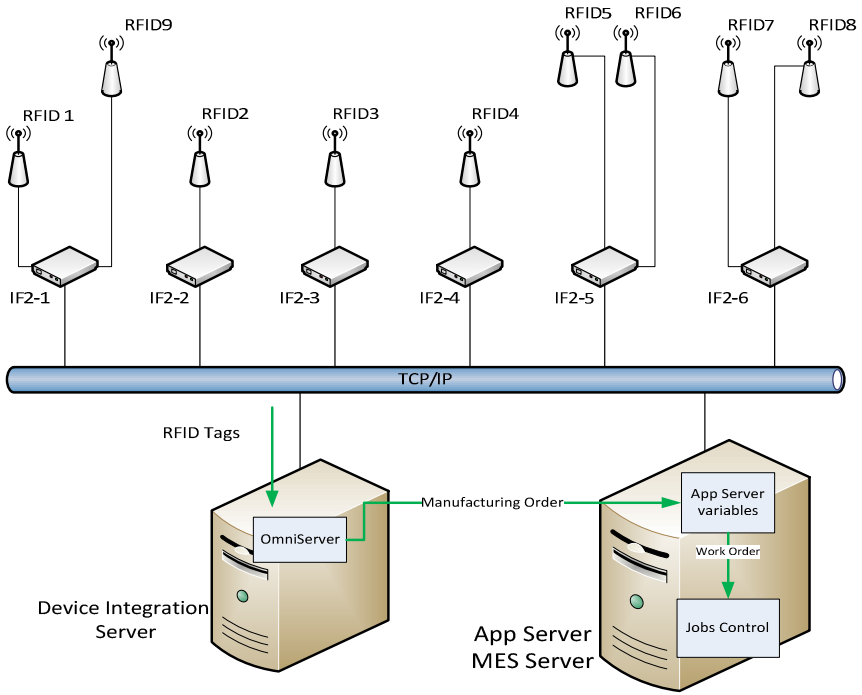


* Note: Device Integration = DASSIDirect 3.0 (Siemens S7), OmniServer 2.7 (RFID - and IBRIX communication), Top Server 5.11 (Omron PLC)

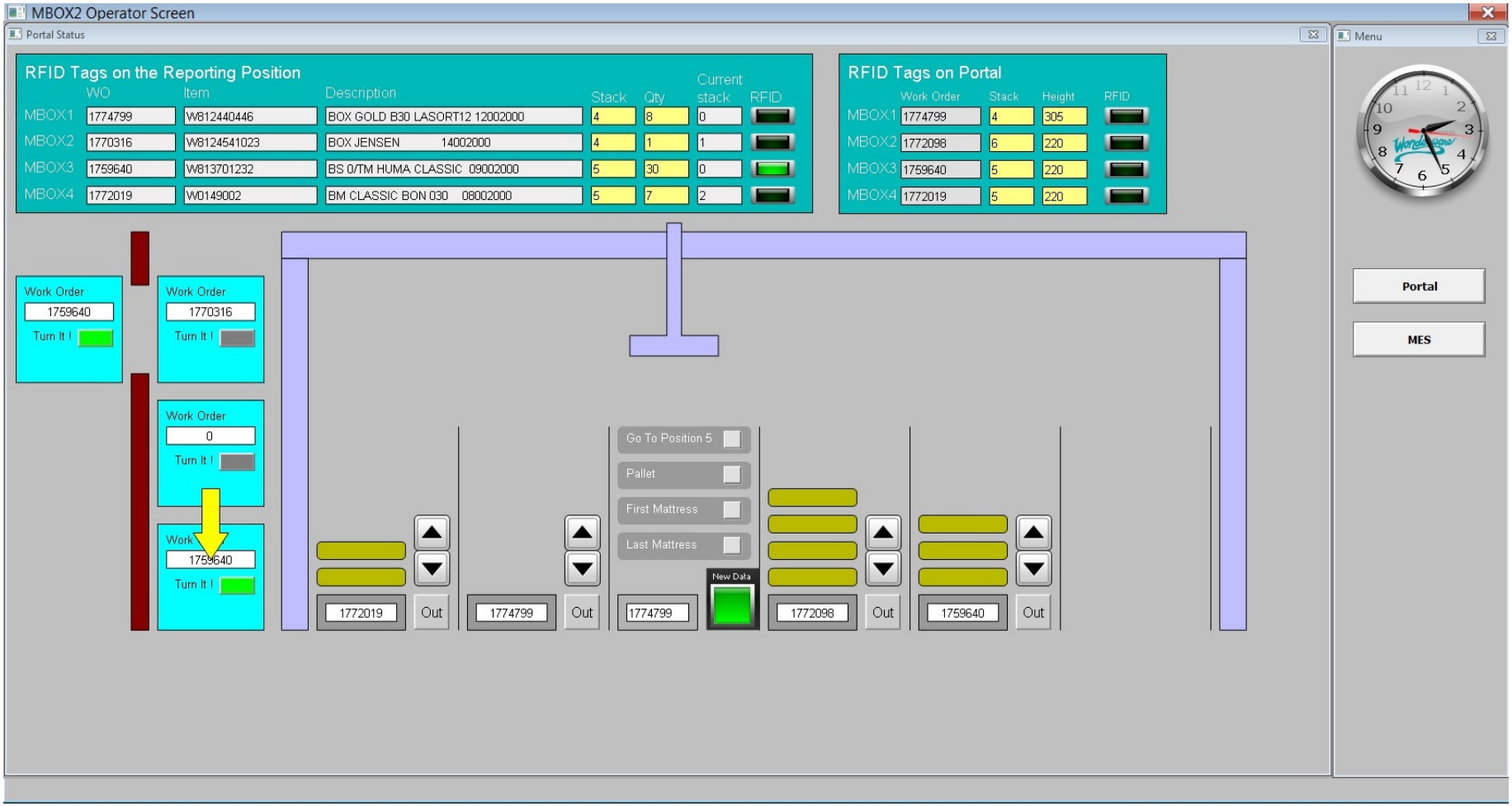
Giving the world a good night´s sleep™

Product traceability & identification

- Collecting and store data in one unique RFID tag about:
  - Raw material, source which supplier and suppliers batch numbers
- Monitor flow trough all of the workstations
- Identifying products through the production process and in warehouse



Improved flow and balancing using IT tools



Hvad er opnået i forhold til målsætning og forventede resultater - Fleksibilitet, sporbarhed, mm.

Product management & innovation

- Products lifetime is getting shorter and shorter. It reinforces the requirement for renewal and a continues improved competitiveness in order to keep our market leader position and status as innovator of our industry.
- There is a need for new updates or product launches every year on the Danish market.
- HA DK have hired its own, dedicated product innovation manager, in order to secure that Hilding Anders Denmark has the most attractive offer in the market place and in our selected product segments.
- HA DK implements new products in the market in close cooperation with other Group product development functions such as Business Area North East, but also with our leading suppliers etc.

Hvad har vi opnået

Individuel håndtering af varenumre i linjen :

- Limprogram
- Håndtering af topmadras
- Foliering
- Krympeovn
- Stakning
- Tapning
- Palletering, mm.

Processikring:

- Verifikation af ramme og toppe
- Automatisk afmelding af emner til ERP/Movex
- Labels direkte fra ERP/Movex
- MES henter data direkte fra ERP

Sporbarhed:

- Hvor er emnet i Boxproduktionen
- Hvor/hvem og hvornår er emnet produceret
- Hvor har vi problemer i anlægget

Vi er fælles om at skabe dette ☺

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Thank You!

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