

Automation

Securing Food Safety with
Automation &
Automation for the Future

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Automation

Topics for today

- ▶ Film “Automation for the future”
- ▶ Short presentation how we see on Food Safety from an Automation point of view
- ▶ Demo with a scenario from a Dairy Production



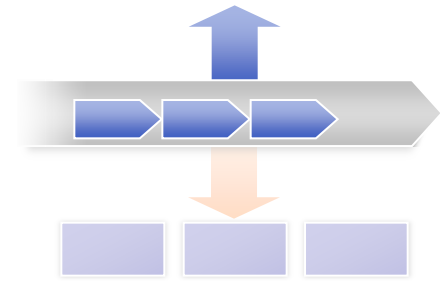


Improved productivity

Food safety

Material vs. Product interlocking

- ▶ Interlocks in the program prevent the operator from, for example, starting cleaning of a unit at the same time as production is running
- ▶ Interlocks in the program prevent that “wrong” product is packed e.g. Chocó milk in a “Strawberry package”



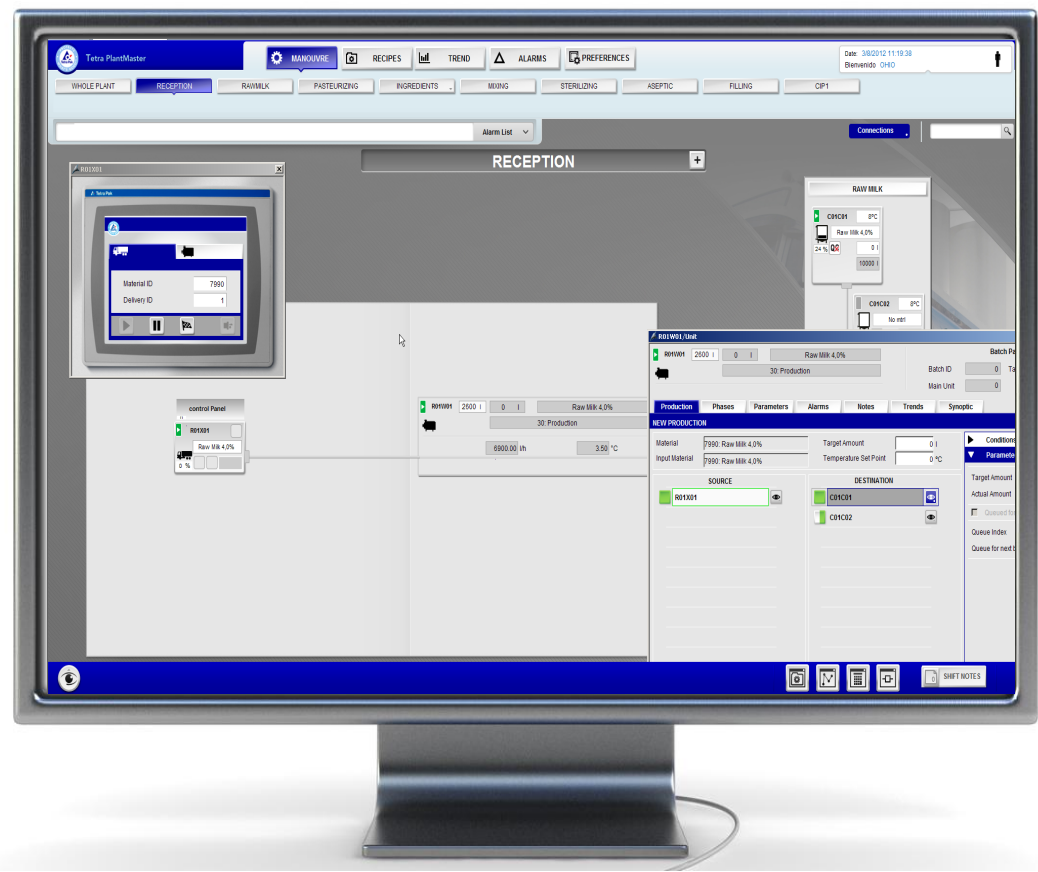
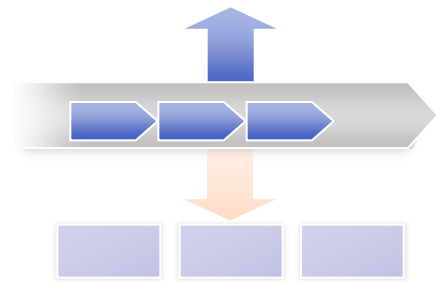


Improved productivity

Food safety

User Interface

- ▶ User friendly
- ▶ Self instructing
- ▶ Help & support the user in the fault handling procedure
- ▶ Same procedure for all operations



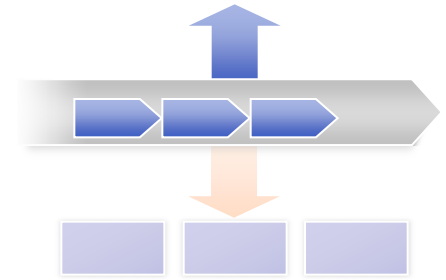


Improved productivity

Food safety

Quality Assurance

- ▶ Active use of QA information
 - Active alarms in the process
 - Approval of equipment
 - Approval of applicable process parameters

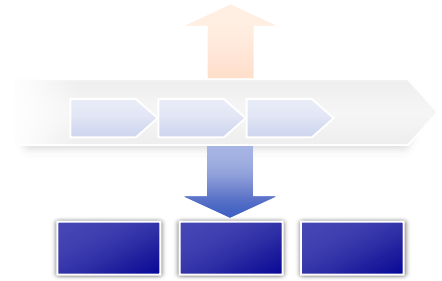




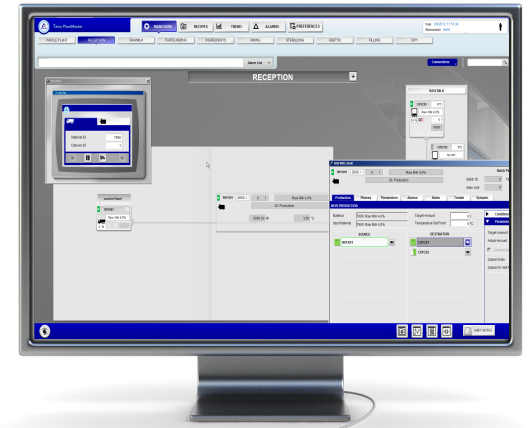
Improved productivity

Food safety

Traceability



Automation Demo





Plant View

Tetra PlantMaster

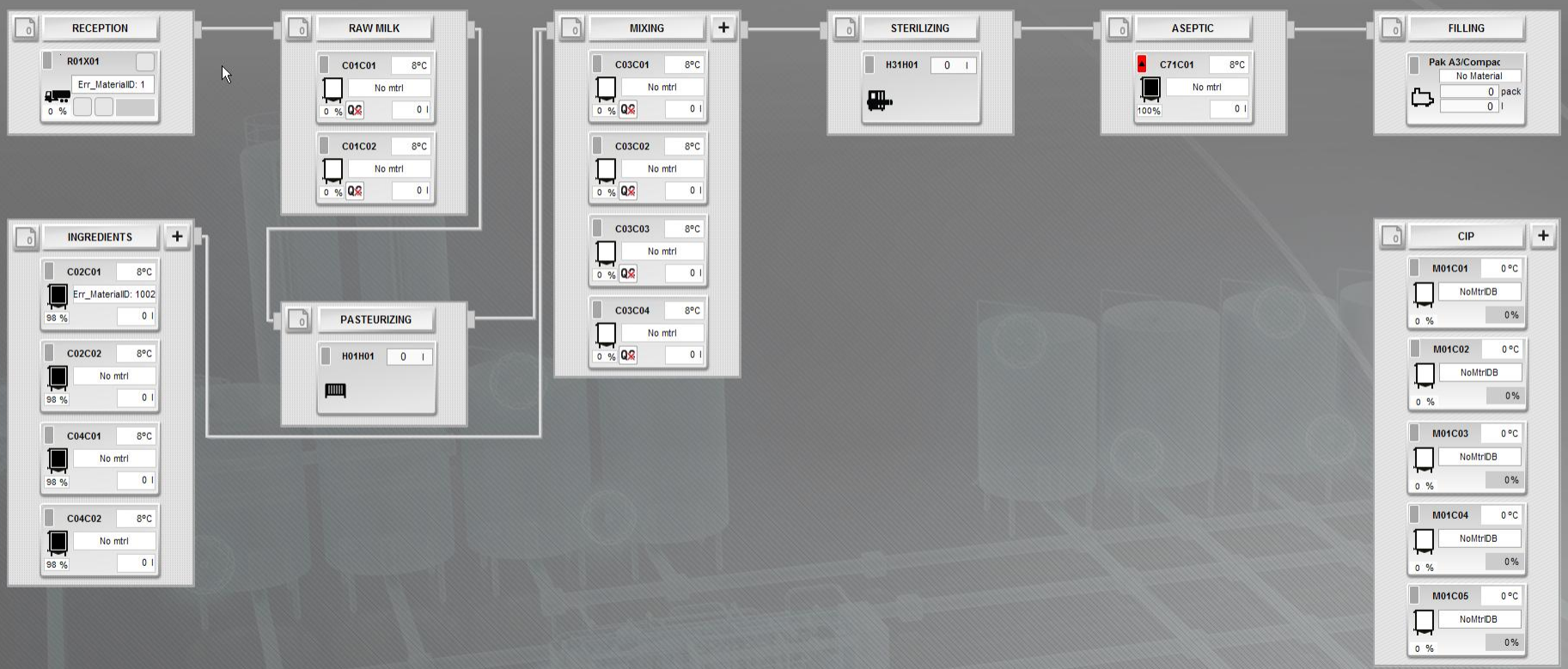
MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 11:03:30
Bienvenido OHIO

WHOLE PLANT RECEPTION RAW MILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Alarm List

Connections



SHIFT NOTES

Internal



Reception

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 11:06:07
Bienvenido OHIO

WHOLE PLANT RECEPTION RAW MILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Alarm List

Connections

RECEPTION

R01X01

Tetra Pak

Material ID: 1
Delivery ID: 0

control Panel

R01X01

Err_MaterialID: 1

R01W01 0 l 0 l No Material

0: Idle

0.00 l/h 7.00 °C

RAW MILK

C01C01 8°C
No mtrl
0 % 0 l
10000 l

C01C02 8°C
No mtrl
0 % 0 l
10000 l

SHIFT NOTES



Reception running

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 11:19:38
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Alarm List

Connections

RECEPTION

R01X01

Tetra Pak

Material ID: 7990
Delivery ID: 1

control Panel

R01X01
Raw Milk 4,0%
0 %

R01W01 2600 l 0 l Raw Milk 4,0%
30: Production
6900.00 l/h 3.50 °C

RAW MILK

C01C01 8°C
Raw Milk 4,0%
24 % 0 l
10000 l

C01C02 8°C
No mtrl

R01W01/Unit

R01W01 2600 l 0 l Raw Milk 4,0%
30: Production
Batch ID: 0
Main Unit: 0

Production Phases Parameters Alarms Notes Trends Synoptic

NEW PRODUCTION

Material: 7990: Raw Milk 4,0% Target Amount: 0 l
Input Material: 7990: Raw Milk 4,0% Temperature Set Point: 0 °C

SOURCE: R01X01
DESTINATION: C01C01, C01C02

Conditions
Parameters
Target Amount
Actual Amount
Queued for
Queue Index
Queue for next

SHIFT NOTES



Raw Milk Tanks

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 17:52:24
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

RECEPTION

R01W01 20700 l

RAW MILK

C01C01 8°C
Raw Milk 4,0%
100% 0 l
10000 l
10000 m³

C01C02 8°C
Raw Milk 4,0%
100% 0 l
10000 l
10000 m³

PASTEURIZING

H01H01 0 l



Pasteurizer

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 17:54:42
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Alarm List

Connections

RAW MILK

C01C01 8°C
Raw Milk 4,0%
100% 0 l
10000 l

C01C02 8°C
Raw Milk 4,0%
100% 0 l
10000 l

PASTEURIZING

H01H01 0 l 0 l Past Milk 4,0%
0: Idle

MIXING

C03C01 8°C
No mtri
0% 0 l
10000 l

C03C03 8°C
No mtri
0% 0 l
10000 l

C03C02 8°C
No mtri
0% 0 l
10000 l

C03C04 8°C
No mtri
0% 0 l
10000 l





Pasteurizer Faceplate

Tetra PlantMaster | MANOUVRE | RECIPES | TREND | ALARMS | PREFERENCES

Date: 3/8/2012 17:59:03
Bienvenido OHIO

WHOLE PLANT | RECEPTION | RAW MILK | **PASTEURIZING** | INGREDIENTS | MIXING | STERILIZING | ASEPTIC | FILLING | CIP1

Alarm List

RAW MILK

- C01C01: 8°C, Raw Milk 4,0%, 78% Q, 10000 l
- C01C02: 8°C, Raw Milk 4,0%, 100% Q, 10000 l

PASTEURIZING

H01H01 / Unit

1800 l | 0 l | Past Milk 4,0%

30: Production

Batch ID: 0 | Target Amount: 0 l
Main Unit: 0

Production | Phases | Parameters | Alarms | Notes | Trends | Synoptic

NEW PRODUCTION

Material: 7995: Past Milk 4,0% | Target Amount: 0 l
Input Material: 7990: Raw Milk 4,0% | Temperature Set Point: 0 °C

SOURCE		DESTINATION	
<input checked="" type="checkbox"/>	C01C01	<input checked="" type="checkbox"/>	C03C01
<input type="checkbox"/>	C01C02	<input checked="" type="checkbox"/>	C03C02
		<input checked="" type="checkbox"/>	C03C03
		<input type="checkbox"/>	C03C04

Conditions

Parameters

- Target Amount: 0 l
- Actual Amount: 0 l
- Queued for next batch:
- Queue Index: 2
- Queue for next batch: 2

Production

MIXING

- C03C01: 8°C, Past Milk 4,0%, 16% Q, 10000 l
- C03C03: 8°C, No mtri, 0% Q, 10000 l
- C03C02: 8°C, No mtri, 0% Q, 10000 l
- C03C04: 8°C, No mtri, 0% Q, 10000 l

Connections

SHIFT NOTES



Ingredients Tank View

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 18:00:08
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMLK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Tanks Lines

Alarm List

Connections

INGREDIENTS

C02C01 8°C
No mtrl
98 %
0 l
5000 l

C04C01 8°C
No mtrl
98 %
0 l
10000 l

C02C02 8°C
No mtrl
98 %
0 l
5000 l

C04C02 8°C
No mtrl
98 %
0 l
10000 l

C03C01 8°C
No mtrl
77 %
0 l
10000 l

C03C03 8°C
No mtrl
0 %
0 l
10000 l

C03C02 8°C
No mtrl
0 %
0 l
10000 l

C03C04 8°C
No mtrl
0 %
0 l
10000 l

C02W01 0 l 0 l No Material
0: Idle
0.00 % 0.00 l/h 7.00 °C
100 l

C02W02 0 l 500 l No Material
0: Idle
0.00 % 0.00 l/h 7.00 °C
100 l

SHIFT NOTES



Ingredients Line View

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 18:00:08
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMLK PASTEURIZING **INGREDIENTS** MIXING STERILIZING ASEPTIC FILLING CIP1

Tanks Lines

Alarm List

Connections

INGREDIENTS

C02C01 8°C
No mtrl
98 %
0 l
5000 l

C04C01 8°C
No mtrl
98 %
0 l
10000 l

C02C02 8°C
No mtrl
98 %
0 l
5000 l

C04C02 8°C
No mtrl
98 %
0 l
10000 l

MIXING

C03C01 8°C
No mtrl
77 %
0 l
10000 l

C03C03 8°C
No mtrl
0 %
0 l
10000 l

C03C02 8°C
No mtrl
0 %
0 l
10000 l

C03C04 8°C
No mtrl
0 %
0 l
10000 l

C02W01 0 l 0 l No Material
0: Idle
0.00 % 0.00 l/h 7.00 °C
100 l

C02W02 0 l 500 l No Material
0: Idle
0.00 % 0.00 l/h 7.00 °C
100 l

SHIFT NOTES



Mixing

Alarm List

Connections

INGREDIENTS

C02W01 0 l

C02W02 0 l

PASTEURIZING

H01H01 9900 l

MIXING

The diagram shows four parallel paths. Each path starts with an ingredient input (C02W01 or C02W02) and a pasteurizer (H01H01). These paths converge into four mixing tanks (C03C01 to C03C04). Each tank has a temperature display (8°C), a volume display (9900 m³ for C03C01, 0 m³ for others), and a 'No mtrl' status.

STERILIZING

H31H01 0 l



Sterilizing

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 18:01:25
Blenvenido OHIO

WHOLE PLANT RECEPTION RAWMLK PASTEURIZING INGREDIENTS MIXING **STERILIZING** ASEPTIC FILLING CIP1

Alarm List

Connections

MIXING

C03C01 8°C Past Milk 4.0% 99% 0 l 10000 l	C03C03 8°C No mtrl 0% 0 l 10000 l
C03C02 8°C No mtrl 0% 0 l 10000 l	C03C04 8°C No mtrl 0% 0 l 10000 l

STERILIZING

H31H01 0 l 0 l No Material 0: Idle
--

ASEPTIC

C71C01 8°C No mtrl 100% 0 l 20000 l

SHIFT NOTES



Filling Area

Tetra PlantMaster

MANOUVRE RECIPES TREND ALARMS PREFERENCES

Date: 3/8/2012 18:01:50
Bienvenido OHIO

WHOLE PLANT RECEPTION RAWMILK PASTEURIZING INGREDIENTS MIXING STERILIZING ASEPTIC FILLING CIP1

Alarm List

Connections

FILLING

ASEPTIC

Tankname 0°C
No mtrl
100% 0 l

Tankname No mtrl Martin Grass Q02V03		Tankname No mtrl Q02V30	Tankname No mtrl Q02V50	Tankname Layers/pallet 99 999/999 Q02V80
Tankname No mtrl Martin Grass Q03V03	Tankname No mtrl 12% Q03V20	Tankname No mtrl Q03V30	Tankname No mtrl Q03V50	Tankname Layers/pallet 99 999/999 Q03V80
Tankname No mtrl Martin Grass Q04V03	Tankname No mtrl 12% Q04V20	20000 l	Tankname No mtrl Q04V50	Tankname Layers/pallet 99 999/999 Q04V80
Tankname No mtrl (Pkgs) 999999 Q05V03	Tankname No mtrl 12% Q05V20	Tankname No mtrl Q05V30	Tankname No mtrl Q05V50	Tankname Layers/pallet 99 999/999 Q05V80
Tankname No mtrl (Pkgs) 999999 Q06V03	Tankname No mtrl 12% Q05V20	Tankname No mtrl Q05V30	Tankname No mtrl Q05V50	Tankname Layers/pallet 99 999/999 Q05V80

Tetra Pak

SHIFT NOTES