Cleaning Audit (v1.0)

Introduction

Data exchange for cleaning OT instructions and return data, with cleaning systems supplier

Supported Messages

XSD / namespace	Message type	Required	Source	Target	Activated by	Remarks
PLCmessage	CleaningAnnouncement	No	Order System	CS PLC Middleware	End-user plans a cleaning in Order System	
PLCmessage	CleaningCancellation	No	Order System	CS PLC Middleware	End-user changes cleaningorder planning in Order System	This is only sent after an a announcement
PLCmessage	ReturnCleaningFinished	Yes	CS PLC Middleware	Order System	Cleaner finishes order on Man-Machine Interface (MMI) display in the cleaning system, which triggers a file generated by the PLC middleware	Some PLC's do not suppo problem, as long as a clea cleaning order in Order Sy Tasknumber in the Order S After having received a cle System must release clea (for example the Europear
PLCmessage	ReturnCleaningSensorValues	No	CS PLC Middleware	Order System	Cleaning finished	

CleaningAnnouncement

Sample Preview

```xml
<?xml version="1.0" standalone="yes"?>
<PLCmessage xmlns="">
  <CleaningAnnouncement>
    <MessageID>a1627a47-6b85-40f9-8b3f-e7520d486f92</MessageID>
    <MessageSent>2019-12-04T12:28:54.9631926+01:00</MessageSent>
    <ProposedPLCKey>Siemens1</ProposedPLCKey>
    <ProposedCleaningBayID>3</ProposedCleaningBayID>
    <CleaningOrderID>1234</CleaningOrderID>
    <CleaningMethodID>13</CleaningMethodID>
    <CustomerName>Piet</CustomerName>
```

```
    <CustomerReference>P123</CustomerReference>
    <CustomerPlace>Dordrecht</CustomerPlace>
    <CustomerCountryISO>NL</CustomerCountryISO>
    <EquipmentNumber>PIET-123456-7</EquipmentNumber>
    <CleanerInstruction>
      <Code>E93</Code>
      <Description>Heet spoelen</Description>
      <Quantity>15</Quantity>
      <Unit>Min</Unit>
    </CleanerInstruction>
    <CleanerInstruction>
      <Code>P99</Code>
      <Description>Slapen</Description>
      <Quantity>1</Quantity>
      <Unit>Uur</Unit>
    </CleanerInstruction>
    <CleanerInstruction>
      <Code>E90</Code>
      <Description>Sealing</Description>
      <Quantity>1</Quantity>
      <Unit>Stuks</Unit>
    </CleanerInstruction>
    <LatestProduct>
      <Compartment>1</Compartment>
      <MainName>NatriumChloride</MainName>
      <TradeName>Zout</TradeName>
    </LatestProduct>
    <LatestProduct>
      <Compartment>2</Compartment>
      <MainName>NatriumChloride</MainName>
      <TradeName>Zout</TradeName>
    </LatestProduct>
    <PLCInstructionStep>
      <StepNumber>1</StepNumber>
      <StepAction>NORMAL</StepAction>
      <DurationInSeconds>100</DurationInSeconds>
      <Water>true</Water>
      <WaterTemperatureCelsius>60</WaterTemperatureCelsius>
      <WaterPressureBar>1.3</WaterPressureBar>
      <RecycledWater>false</RecycledWater>
      <Steam>false</Steam>
      <SteamTemperatureCelsius>0</SteamTemperatureCelsius>
      <SteamPressureBar>0</SteamPressureBar>
      <Rinse>false</Rinse>
      <RinseTemperatureCelsius>0</RinseTemperatureCelsius>
      <Chemical>F85</Chemical>
      <ChemicalDosagePercent>0.4</ChemicalDosagePercent>
      <WasteWaterStream>0</WasteWaterStream>
    </PLCInstructionStep>
    <PLCInstructionStep>
      <StepNumber>2</StepNumber>
      <StepAction>NORMAL</StepAction>
      <DurationInSeconds>30</DurationInSeconds>
      <Water>false</Water>
      <WaterTemperatureCelsius>60</WaterTemperatureCelsius>
      <WaterPressureBar>1.3</WaterPressureBar>
      <RecycledWater>false</RecycledWater>
      <Steam>false</Steam>
```

```
      <SteamTemperatureCelsius>0</SteamTemperatureCelsius>
      <SteamPressureBar>0</SteamPressureBar>
      <Rinse>false</Rinse>
      <RinseTemperatureCelsius>0</RinseTemperatureCelsius>
      <Chemical />
      <ChemicalDosagePercent>0</ChemicalDosagePercent>
      <WasteWaterStream>0</WasteWaterStream>
    </PLCInstructionStep>
    <PLCInstructionStep>
      <StepNumber>3</StepNumber>
      <StepAction>NORMAL</StepAction>
      <DurationInSeconds>100</DurationInSeconds>
      <Water>false</Water>
      <WaterTemperatureCelsius>60</WaterTemperatureCelsius>
      <WaterPressureBar>1.3</WaterPressureBar>
      <RecycledWater>false</RecycledWater>
      <Steam>true</Steam>
      <SteamTemperatureCelsius>130</SteamTemperatureCelsius>
      <SteamPressureBar>3</SteamPressureBar>
      <Rinse>false</Rinse>
      <RinseTemperatureCelsius>0</RinseTemperatureCelsius>
      <Chemical />
      <ChemicalDosagePercent>0</ChemicalDosagePercent>
      <WasteWaterStream>0</WasteWaterStream>
    </PLCInstructionStep>
  </CleaningAnnouncement>
</PLCmessage>
```

Definition

Field	XML type	Remarks
MessageID	xs:string	Unique GUID for this specific file
MessageSent	xs:datetime	Datetime the message was sent
ProposedPLCKey	xs:string	Parties have to agree on a uniqie keyphrase to identlfy a PLC, so that messages can support a multiple PLC architecture.
ProposedCleaningBayID	xs:int	The ID is the number as it is known in the Cleaning Sytems-side PLC. The actual PLC group can be returned in the return message. Proposed might have value if you wish to force food, chem or other types of orders to a specific cleaning bay (group).
CleaningOrderID	xs:int	The ID is the number that is published by Order System. (aka. the **cleaning ticketnumber**)
CleaningMethodID	xs:int	Usually required. The ID is the number as it is known in the Cleaning Sytems-side PLC.
CustomerName	xs:string	Optional. Used for reporting/BI purposes.
CustomerReference	xs:string	Optional. Used for reporting/BI purposes.
CustomerPlace	xs:string	Optional. Used for reporting/BI purposes.
CustomerCountryISO	xs:string	Optional. Used for reporting/BI purposes.
EquipmentNumber	xs:string	Optional.
CustomerCountReference	xs:string	Optional.
LatestProduct	Structure	Optional. Can be used for reporting / BI purposes.
Compartment	xs:int	Mandatory
MainName	xs:string	Latest primary product name
TradeName	xs:string	Latest product tradename / product synonym
CleanerInstruction	Structure	Optional. Steps that a cleaner must take, can be used for reporting / BI purposes.
Code	xs:string	

Description	xs:string	
Quantity	xs:int	
Unit	xs:string	*For example: x, pcs, liter, etc.*
PLCInstructionStep	Structure	Optional. Instead of using a cleaning method ID that is known by the PLC, a set of specific PLC instructions can be sent to execute.
--see text--		The PLCInstructionStep structure is identical to the one in CleaningMethodDefinition message. For field summary see the CleaningMethodDefinition message furtheron

CleaningCancellation

Sample Preview

```
<?xml version="1.0" standalone="yes"?>
<PLCmessage xmlns="">
  <CleaningCancellation>
    <MessageID>0ed9eb3b-adf8-4ed2-b6f5-45c9be8f171b</MessageID>
    <MessageSent>2019-12-04T12:28:54.9691761+01:00</MessageSent>
    <CleaningOrderID>1234</CleaningOrderID>
  </CleaningCancellation>
</PLCmessage>
```

Definition

Field	XML type	Remarks
MessageID	xs:string	Unique GUID for this specific file
MessageSent	xs:datetime	Datetime the message was sent
CleaningOrderID	xs:int	The ID is the number that is published by Order System. (aka. the **cleaning ticketnumber**)

ReturnCleaningFinished

Sample Preview

```
<?xml version="1.0" standalone="yes"?>
<<?xml version="1.0" standalone="yes"?>
<PLCmessage xmlns="">
  <ReturnCleaningFinished>
    <MessageID>605bc098-43b0-428f-ae61-aa4bd5d0f264</MessageID>
    <MessageSent>2019-12-04T12:28:54.9771535+01:00</MessageSent>
    <ActualPLCKey>Siemens1</ActualPLCKey>
    <ActualCleaningBayID>2</ActualCleaningBayID>
    <CleaningOrderID>1234</CleaningOrderID>
    <CleaningStarted>2019-12-04T11:28:54.9771535+01:00</CleaningStarted>
    <CleaningFinished>2019-12-04T12:13:54.9771535+01:00</CleaningFinished>
    <HotWater80Duration>PT34M56S</HotWater80Duration>
    <HotWater80Liter>13</HotWater80Liter>
    <HotWater60Duration>PT34M56S</HotWater60Duration>
    <HotWater60Liter>13</HotWater60Liter>
    <HotWater40Duration>PT0S</HotWater40Duration>
    <HotWater40Liter>13</HotWater40Liter>
    <ColdWaterDuration>PT12M34S</ColdWaterDuration>
    <ColdWaterLiter>13</ColdWaterLiter>
    <SteamingDuration>PT12M34S</SteamingDuration>
    <ChemicalUsage>
      <ChemicalName>Alkaline</ChemicalName>
      <ChemicalCode>C01</ChemicalCode>
```

```
      <Duration>PT12M34S</Duration>
      <Liter>3</Liter>
    </ChemicalUsage>
    <ChemicalUsage>
      <ChemicalName>Acid</ChemicalName>
      <ChemicalCode>C02</ChemicalCode>
      <Duration>PT12M34S</Duration>
      <Liter>4</Liter>
    </ChemicalUsage>
  </ReturnCleaningFinished>
</PLCmessage>
```

Definition

Field	XML type	Remarks
MessageID	xs:string	Unique GUID for this specific file.
MessageSent	xs:datetime	Datetime the message was sent.
ActualPLCKey	xs:string	Parties have to agree on a unique keyphrase to identlfy a PLC, so that messages can support a multiple PLC architecture.
ActualCleaningBayID	xs:int	The ID is the number as it is known in the Cleaning Sytems-side PLC.
CleaningOrderID	xs:int	The ID is the number that is published by Order System. (aka. the **cleaning ticketnumber**) Some PLC's do not support announcement. This is not a problem, as long as a cleaning order ID corresponding with the cleaning order in Order System (which is usually called a Tasknumber in the Order System) was entered.
CleaningStarted	xs:datetime	
CleaningFinished	xs:datetime	
HotWater80Duration	xs:duration	Hot water spin (T>80°C) (EFTCO code P09)
HotWater80Liter	xs:float	Hot water spin (T>80°C) (EFTCO code P09)
HotWater60Duration	xs:duration	Hot water spin (T>60°C) (EFTCO code P10)
HotWater60Liter	xs:float	Hot water spin (T>60°C) (EFTCO code P10)
HotWater40Duration	xs:duration	Hot water spin (T>40°C) (EFTCO code P11)
HotWater40Liter	xs:float	Hot water spin (T>40°C) (EFTCO code P11)
ColdWaterDuration	xs:duration	Cleaning with potable water only (EFTCO code F01)
ColdWaterLiter	xs:float	Cleaning with potable water only (EFTCO code F01)
SteamingDuration	xs:duration	Steaming (EFTCO code P40)
ChemicalUsage	Structure	
ChemicalName	xs:string	Optional, description of the chemical.
ChemicalCode	xs:string	Mandatory EFTCO code of chemical, this can be: • C01 (Alkaline detergent) • C20 (Acid detergent) • C50 (Organic acid) • C80 (Sanitising Agent (could be any disinfectant that customer places in the cleaning station)) • F85 (Hydrogen peroxide) • F86 (Peracetic acid)
Duration	xs:duration	
Liter	xs:float	

ReturnCleaningSensorValues

Sample Preview

```
<?xml version="1.0" standalone="yes"?>
<PLCmessage xmlns="">
```

```xml
<ReturnCleaningSensorValues>
  <MessageID>84142d13-73f3-406e-9a30-97d3fac25cfc</MessageID>
  <MessageSent>2019-12-04T12:28:54.9801553+01:00</MessageSent>
  <CleaningOrderID>1234</CleaningOrderID>
  <WaterTemperature>
    <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
    <JetNumber>1</JetNumber>
    <PresetCelsius>50</PresetCelsius>
    <MeasuredCelsius>49.2</MeasuredCelsius>
    <SensorError>false</SensorError>
  </WaterTemperature>
  <WaterTemperature>
    <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetCelsius>50</PresetCelsius>
    <MeasuredCelsius>50.1</MeasuredCelsius>
    <SensorError>false</SensorError>
  </WaterTemperature>
  <WaterTemperature>
    <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
    <JetNumber>1</JetNumber>
    <PresetCelsius>50</PresetCelsius>
    <MeasuredCelsius>48.3</MeasuredCelsius>
    <SensorError>false</SensorError>
  </WaterTemperature>
  <WaterTemperature>
    <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetCelsius>50</PresetCelsius>
    <MeasuredCelsius>47.2</MeasuredCelsius>
    <SensorError>false</SensorError>
  </WaterTemperature>
  <SteamTemperature>
    <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetCelsius>120</PresetCelsius>
    <MeasuredCelsius>119.1</MeasuredCelsius>
    <SensorError>false</SensorError>
  </SteamTemperature>
  <SteamTemperature>
    <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetCelsius>120</PresetCelsius>
    <MeasuredCelsius>119.2</MeasuredCelsius>
    <SensorError>false</SensorError>
  </SteamTemperature>
  <SteamTemperature>
    <CleaningTimeElapsed>PT3M45S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetCelsius>120</PresetCelsius>
    <MeasuredCelsius>119.3</MeasuredCelsius>
    <SensorError>false</SensorError>
  </SteamTemperature>
  <Pressure>
    <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
    <JetNumber>2</JetNumber>
    <PresetBar>2</PresetBar>
    <MeasuredBar>1.879</MeasuredBar>
```

```
      <SensorError>false</SensorError>
    </Pressure>
    <Pressure>
      <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
      <JetNumber>2</JetNumber>
      <PresetBar>2</PresetBar>
      <MeasuredBar>1.79</MeasuredBar>
      <SensorError>false</SensorError>
    </Pressure>
    <Pressure>
      <CleaningTimeElapsed>PT3M45S</CleaningTimeElapsed>
      <JetNumber>2</JetNumber>
      <PresetBar>2</PresetBar>
      <MeasuredBar>1.9</MeasuredBar>
      <SensorError>false</SensorError>
    </Pressure>
    <FlowRate>
      <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
      <JetNumber>1</JetNumber>
      <PresetLiterPerMinute>200</PresetLiterPerMinute>
      <MeasuredLiterPerMinute>199</MeasuredLiterPerMinute>
      <SensorError>false</SensorError>
    </FlowRate>
    <FlowRate>
      <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
      <JetNumber>1</JetNumber>
      <PresetLiterPerMinute>200</PresetLiterPerMinute>
      <MeasuredLiterPerMinute>201</MeasuredLiterPerMinute>
      <SensorError>false</SensorError>
    </FlowRate>
    <FlowRate>
      <CleaningTimeElapsed>PT3M45S</CleaningTimeElapsed>
      <JetNumber>1</JetNumber>
      <PresetLiterPerMinute>200</PresetLiterPerMinute>
      <MeasuredLiterPerMinute>193</MeasuredLiterPerMinute>
      <SensorError>false</SensorError>
    </FlowRate>
    <ChemicalDosage>
      <CleaningTimeElapsed>PT1M23S</CleaningTimeElapsed>
      <ChemicalName>Acid</ChemicalName>
      <ChemicalCode>C02</ChemicalCode>
      <PresetPercentage>0.4</PresetPercentage>
    </ChemicalDosage>
    <ChemicalDosage>
      <CleaningTimeElapsed>PT2M34S</CleaningTimeElapsed>
      <ChemicalName>Acid</ChemicalName>
      <ChemicalCode>C02</ChemicalCode>
      <PresetPercentage>0.4</PresetPercentage>
    </ChemicalDosage>
  </ReturnCleaningSensorValues>
</PLCmessage>
```

Definition

Field	XML type	Remarks
MessageID	xs:string	Unique GUID for this specific file
MessageSent	xs:datetime	Datetime the message was sent

CleaningOrderID	xs:int	The ID is the number that is published by Order System. (aka. the **cleaning ticketnumber**) Some PLC's do not support announcement. This is not a problem, as long as a cleaning order ID corresponding with the cleaning order in Order System (which is usually called a Tasknumber in Order System) was entered.
WaterTemperature	Structure	
CleaningTimeElapsed	xs:duration	Required: Time since the start of the cleaning process
JetNumber	xs:int	Please use JetNumber 0 for Air line
PresetCelsius	xs:float	Optional: This would be the target value set by the cleaning method in the PLC
MeasuredCelsius	xs:float	
SensorError	xs:bool	Please note that Cleaning Systems provider is responsible for marking any unintended peak values caused by analog events as an error. Measurements with errors are usually not displayed in the Order System. When starting a cleaning the system could get a "jolt" that causes unintended analog values.
SteamTemperature	Structure	
CleaningTimeElapsed	xs:duration	Required: Time since the start of the cleaning process
JetNumber	xs:int	Please use JetNumber 0 for Air line
PresetCelsius	xs:float	Optional: This would be the target value set by the cleaning method in the PLC
MeasuredCelsius	xs:float	
SensorError	xs:bool	Please note that Cleaning Systems provider is responsible for marking any unintended peak values caused by analog events as an error. Measurements with errors are usually not displayed in the Order System. When starting a cleaning the system could get a "jolt" that causes unintended analog values.
Pressure	Structure	
CleaningTimeElapsed	xs:duration	Required: Time since the start of the cleaning process
JetNumber	xs:int	Please use JetNumber 0 for Air line
PresetBar	xs:float	Optional: This would be the target value set by the cleaning method in the PLC
MeasuredBar	xs:float	
SensorError	xs:bool	Please note that Cleaning Systems provider is responsible for marking any unintended peak values caused by analog events as an error. Measurements with errors are usually not displayed in the Order System. When starting a cleaning the system could get a "jolt" that causes unintended analog values.
FlowRate	Structure	
CleaningTimeElapsed	xs:duration	Required: Time since the start of the cleaning process
JetNumber	xs:int	Please use JetNumber 0 for Air line
PresetLiterPerMinute	xs:float	Optional: This would be the target value set by the cleaning method in the PLC
MeasuredLiterPerMinute	xs:float	
SensorError	xs:bool	Please note that Cleaning Systems provider is responsible for marking any unintended peak values caused by analog events as an error. Measurements with errors are usually not displayed in the Order System. When starting a cleaning the system could get a "jolt" that causes unintended analog values.
ChemicalDosage	Structure	
CleaningTimeElapsed	xs:duration	Required: Time since the start of the cleaning process
ChemicalName	xs:string	Optional, description of the chemical.
ChemicalCode	xs:string	EFTCO code of chemical (if any), this can be: • C01 (Alkaline detergent) • C20 (Acid detergent) • C50 (Organic acid) • C80 (Sanitising Agent (could be any disinfectant that customer places in the cleaning station)) • F85 (Hydrogen peroxide) • F86 (Peracetic acid)
PresetPercentage	xs:float	Chemical dosageis usually calculated by taking time and the preset chemical dosage (often it is fixed around .4%). It must be 0 if not turned on, since at that moment the dosage is 0% For example: *If 1.0% dosage is calculated at 100 liter per minute, 1 liter of chemicals are dosed*

Pro tip!

Please use the sensor error flags to indicate when a sensor is broken, or when a jolt is going through the analog system that causes spikes in the measured data.When the data is visualised at a later stage, the errorous lines containing analog spikes (which could occur at the start of a cleaning order) should be skipped in order to publish a visual graph with proper data and a proper scale.