|  |  |  |
| --- | --- | --- |
| SSI #: 177003 177005 -181982 181929 182050 | Rev. | Task ID / Description |
| A | MC3 AVT PLC - Implement Comexi Sweep Control - Profibus Bridge  MC3 AVT PLC - Comexi Sweep Control - Profibus Bridge - Press Simulator  MC3 - SiteGen - Add Comexi Sweep Control to AVT PLC types  MC3 - App Server - Add Comexi Sweep Control to AVT PLC types  MC3 - App Server - AVT PLC swp/wtr - updates to on-press values should update the console value  MC3 - SiteGen - AVT PLC swp/wtr - updates to on-press values should update the console value |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Type (Select 1) | Requirements Spec Status | | | Design Spec Status | | | Code Inspection Status | | |
| Enhancement | For Review  Accepted  Rejected | | | For Review  Accepted  Rejected | | | For Review  Accepted  Rejected | | |
| New Feature | Process | Name | Date | Process | Name | Date | Process | Name | Date |
| Bug Fix | Originator |  |  | Originator |  |  | Originator | Mark Colvin | 9/25/20 |
|  | Reviewed |  |  | Reviewed |  |  | Reviewed |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Impact | Check-In | | Carry back/over | |
| High Risk  Medium Risk  Low Risk | Checked into PVCS  Baseline: | Date | Carry back  Carry over  Branch:       Branch: | Date |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Systems Affected (Select all that apply) | | | | |
| Host/Console | Subsystems | Peripherals | OEM (must also select Host) | \*OEM Type |
| Autosmart | CCU– PQ Camera Ctrl Unit | Autosmart Cmgr | ABB | Standard |
| Clarios | Clarios/CQD On-Press | CIP– CIP Interpreter | CANbus | Master |
| Microcolor II | Client | CN2 – Colornet II | Goss Colortrol | Slave |
| Mercury | Configuration | CQCM – CQ Cmgr | Goss Nantes |  |
| PressAnalysis | CQFG – CQ Frame Grabber | PS – PlateServer | Goss OV3 \* |  |
| PrintQuick | L&A – Lights & Alarms | PDE – Press Data Export | Goss PCQ II PLC |  |
| RibbonQuick | NGOP (NGPH) | PQCM – PQ Cmgr | Goss TCS PCQ |  |
| Simulators | OCU3 |  | Goss TCS/O2 \* |  |
| Internal Tools (      ) | PCU |  | HWS CPC |  |
|  | PHCM |  | KBA Colortronic \* |  |
|  | PQCAM – PQ Camera |  | KBA Densitronic |  |
|  | RCU – Ribbon Control Unit |  | KBA Colortronic SCL | Documentation |
|  | RPLC – RIO PLC | PLC | Komori PQC-IV | Manual(s) |
|  | RQCAM – RQ Camera | Chambon | MAN Pecom04 | Service Note(s) |
|  | Server | Goss | MAN Pecom95 | Release Notes(s) |
| Other Systems | Servo2+ | Hantscho | MAN Pecom90 | Install Docs |
| Jupiter | SVO – Servo | Mitsubishi | MLP API | Theory of Operation |
|  | SpectralLab SMU | Toshiba | Mitsu II \* | (Other) |
|  | SPU | RIO/Rabbit |  |  |
|  | SPU3 | (Other) | (Other) |  |
|  | TCM – CQ Timing Control |  |  |  |
|  | TCMR–PQ Timing Control |  |  |  |
|  | (Other) |  |  |  |

Requirement Specification Details: (If separate document) See SDS

# General Description of the Task and its Desired End Result / Description of the Problem Found (Bug Fix)

# Interface Requirements (Specify type of interface such as User, Communication, etc.)

WI 177002 - MC3 AVT PLC - Implement Comexi Sweep Control - Profibus Bridge

Mercury Sweep controls for Comexi CIC press type.

Profibus network interface for Comexi Sweep Interface.

Assume Comexi Sweep interface is Profibus DP Master at station address 1.

Assume AVT interface must be available at station 8.

Profibus data configuration is:

**8 x 16bit Inputs to Comexi Sweep controller** – values 0 to 99 allowed. These registers will be used by Mercury Sweep interface to change the fountain roller speeds.

**8 x 16bit Outputs from Comexi Sweep controller** – values 0 to 99 allowed. These registers will be used to indicate the current fountain roller speeds. This information will be used by the Mercury system to show ON-PRESS data on the Mercury client.

No other controls or status from Comexi Sweep Controller.

Comexi Sweep controller sets the baud rate of Profibus network. AVT sweep interface should detect the baud rate from master.

# Functional Requirements

Mercury software should control sweep settings of each fountain, up to 8.

Mercury software should indicate sweep status for each fountain.

Sweep values of 0 to 99 are allowed.

# Performance Requirements

Detect connection faults.

Unknown speed or timing requirements.

# Other Requirements

Design Specification Details: (If separate document) See SDS:

# Root Cause Analysis: (Bug fix)

# Theory of Operation: (Describe all algorithms and sequence of events within the task)

WI 177005 - MC3 - App Server - Add Comexi Sweep Control to AVT PLC types

New type of Beckhoff PLC type needed for AVT PLC Sweep control. This sweep control is a PLC based Bridge - from MODBUS to Profibus Sweep controller on Comexi CI8 press. Use same MODBUS addresses for Sweep Runtime Data as PCU, Ramping PLC type.

SiteGen configuration is IP address and port number only. No PLC configuration required. These will be hardware coded. up to 10 fountains.

No other sweep/water features needed. Console value and onpress values handled, as 0 to 99% given to PLC via MODBUS.

Not sure about error handling and data range other than 0 to 99% - connection detect only.

I see from Tim’s photos (see email included) that there are separate registers for input and output to Comexi sweep controller. I see there is Comexi PLC logic to equalize these registers for each fountain. Comexi input registers will come from our client console values, when these values change the new value is written to Comexi input registers and we will read Comexi output registers as our on-press data for the same fountain. At some point these values will be equal and the same will occur at the Mercury console.

Press Aux. controls (not Mercury) are present to change sweep roller speed. PLC and App Server must respect settings from these controls. These are simulated in Press Simulator software. Press PLC logic transfers the console settings from Mercury to roller speed. This is also simulated by Press Simulator.

# User Interface Related Changes/Additions: (Describe all UI additions and changes expected)

## Purpose

## Inputs

## Processing

## Outputs

## Changes/Additions to Title/Configuration/Menu

# Internal System Related Changes/Additions: (Describe all additions and changes expected)

## Purpose

## Inputs

## Processing

## Outputs

## Change/Addition title

# Global Structure (Class) Requirements: (List all global structure changes and additions expected)

|  |  |  |  |
| --- | --- | --- | --- |
| NEW / REV | CLASS / STRUCTURE NAME | TYPE (Size) | DESCRIPTION |
|  |  |  |  |

# Global Variable Requirements: (List all global variable changes and additions expected)

|  |  |  |
| --- | --- | --- |
| NEW / REV | TYPE (Size) | DESCRIPTION |
|  |  |  |

# Network Message Requirements: (List all network message changes and additions expected)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NEW / REV | SYSTEM | | PROTOCOL  (Ethernet, Serial) | DESCRIPTION |
| FROM | TO |
|  |  |  |  |  |

# Resource String Changes/Additions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NEW/ REV | MESSAGE ID | TEXT | MAX LTH | TRANSLATE  (Y/N) |
|  |  |  |  |  |

Implementation Details: (If separate document) See SDS:

# Changes Made to Implement the Task: (Describe changes made)

Mercury 1.70 release (and later) must be used.

**Sweep PLC source files: POU and GVL style source file of Structured Text PLC logic:**

MAIN.TcPOU Main loop of PLC logic, handles initialization, Profibus connection, sweep console and on-press data handling

FBInitializeProgram\_PB.TcPOU Function Block for handling GVL data initialization

FBInkSweep\_PB.TcPOU Function Block to handling data handling of console and on-press data for sweep control.

FBRealtimeSupport.TcPOU Function Block for handling real time data of sweep control – not implemented yet

FProcessError.TcPOU Function Block for handling error queue to the App Server.

FLogging.TcPOU Function to handling PLC logging to PLC HDD system events file

GVL.TcGVL Main Global Variable List

GVL\_IO.TcGVL IO related Global Variable List – mapped to hardware registers/booleans

See other included documents for further information on:

PLC details

PLC MODBUS addressing

Simulation

Testing

# Function Changes / Additions: (List all functions affected by the change)

|  |  |  |  |
| --- | --- | --- | --- |
| NEW / REV | FILENAME | ARCHIVE REVISION | FUNCTION NAMES |
|  |  |  |  |

# Global Structure (Class) Changes / Additions: (List all global structures changed or added)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NEW / REV | CLASS / STRUCTURE NAME | CLASS / STRUCTURE MEMBERS | | DESCRIPTION |
| TYPE (Size) | VARIABLE NAME |
|  |  |  |  |  |

# Global Variable Changes / Additions: (List all global variables changed or added)

|  |  |  |  |
| --- | --- | --- | --- |
| NEW / REV | TYPE (Size) | VARIABLE NAME | DESCRIPTION |
|  |  |  |  |

# Network Message Changes / Additions: (List all messages changed or added)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| NEW / REV | MSG #  (0x0100) | SYSTEM | | PROTOCOL  (Ethernet, Serial) | MESSAGE FORMAT (Data Content) | DESCRIPTION |
| FROM | TO |
|  |  |  |  |  |  |  |

# Resource String Changes/Additions: (List all messages changed or added)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NEW/ REV | MESSAGE ID | TEXT | MAX LTH | TRANSLATE  (Y/N) |
|  |  |  |  |  |

Test Plan Details: (If separate document) See STP:

# Steps to reproduce the problem: (Bug Fix)

## Test Setup

|  |  |
| --- | --- |
| Load used to produce problem |  |
| Lab testable (YES/NO) |  |
| Spin fixture needed(YES/NO) |  |
| OEM, configuration and setup required |  |
| Supporting Software |  |
| Other (Specify) |  |

## Test Steps

# Test Summary

|  |  |  |  |
| --- | --- | --- | --- |
| NAME/NUMBER | DESCRIPTION (PURPOSE) | ALPHA OR BETA TEST | REQUIREMENT |
|  |  |  |  |

# Test Procedures

## Alpha Tests

### Test Name/Number

#### Purpose (Describe the capabilities to be verified)

#### Method (Describe steps for conducting the test)

Input (Describe any input data to be supplied for the test)

Output (Describe any output data to be collected)

Evaluation Criteria (Describe how to determine test success or failure)

Errors/Retesting (Describe error handling)

Results (Describe expected/actual results of the test)

## Beta Tests

### Test Name/Number

#### Purpose (Describe the capabilities to be verified)

#### Method (Describe steps for conducting the test)

#### Input (Describe any input data to be supplied for the test)

#### Output (Describe any output data to be collected)

#### Evaluation Criteria (Describe how to determine test success or failure)

#### Errors/Retesting (Describe error handling)

#### Results (Describe expected/actual results of the test)

Inspection Details: (If separate document):

# General Information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | DATE | MEETING LENGTH | INSPECTION TYPE | DESCRIPTION |
|  |  |  |  |  |

# Attendees

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # | MODERATOR | PREP TIME | READER | PREP TIME | TESTER | PREP TIME | AUTHOR | GUEST |
|  |  |  |  |  |  |  |  |  |

# Code Inspected

|  |  |  |
| --- | --- | --- |
| MODULE NAME | LINES OF CODE INSPECTED | COMMENTS |
|  |  |  |

# Defects

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| # | DEFECT  TYPE | SEVERITY | MODULE | LINES | DESCRIPTION |
|  |  |  |  |  |  |

The following table lists the types of standard defects:

| **Number** | **Name** | **Description** |
| --- | --- | --- |
| COM | Comments | Code, documentation, messages & manuals |
| SYN | Syntax | General syntax problems |
| TYP | Typos | Spelling and punctuation |
| IF | Instruction Format | General format problems |
| BE | Begin-end | Improper operation delimiters |
| BU | Build | Package change management, library, version control, system build |
| ASN | Assignment | General assignment problems |
| NC | Naming convention | Naming declaration, duplicate names |
| SVR | Scope of Variables |  |
| IC | Initialize and close | Variables, objects, etc. |
| RVL | Range variable limits | Array range |
| IF | Interface | General interface problems |
| IN | Internal | Procedure calls and references |
| IO | Input/Output | File, display, printer, communication |
| UF | User formats | Contents |
| CEM | Checking error messages | Inadequate checks |
| DSC | Data Structure | Content |
| DSS | Data Structure | Scope |
| FUN | Function | General logic |
| PTR | Pointers | Pointers, strings |
| LP | Loops | Off-by-one, incrementing, recursion, etc. |
| AG | Algorithmic | Application computations |
| SC | System Configuration | Timing, memory, etc. |
| ENV | Environment | Design, compile, test, other support system problems |
| REQ | Requirement | Missed, incomplete or incorrect requirement |
| STD | Standards | Non-conformance to the coding standard |
| MIS | Missing | Overlooked, left out |
| X | Extra | Not needed |
| PF | Performance | Impacts the performance of the code |
| OI | Open Item | Unresolved item assigned as an action item |

Documentation Details:

# Manuals:

# Service Notes:

# Release Notes:

# Install Docs:

# Theory of Operation:

# Other (Specify):