1. **Revision Log**

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| Revision Log | | | | | |
| Revision Level | Revision Date | Section | Description | | Revised By |
| REL | 05162016 | ---- | Initial Release | | DA/DE |
| A | 05/17/2017 | ---- | Revised Document Structure sections 5.3, 5.4, 5.5 and 5.6 with new content and Added Audit questions | | MJG |
| B | 7/29/2019 |  | Mass update, complete re-write to standard | | NT |
| C | 12/1/23 | Header | Replaced GHSP logo with newer version | | B. Balok |
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| Approval: | | CN: RS,FS | | MX: JH | |
| US: JA | | Other (as req’d): DRW | |

1. **Purpose:** 
   1. To define the global standard for the use of Data Acquisition Systems with GHSP manufacturing facilities.
2. **Scope:**
   1. This global standard applies to all GHSP manufacturing facilities.
3. **Definitions:**
   1. METS – Mechatronic Traceability System
   2. CCTV – Closed Circuit Television
      1. The use of video cameras to transmit a signal to a specific place, on a limited set of monitors.
   3. SCADA – Supervisory Control and Data Acquisition
      1. Supervisory software for PLCs and other devices that allows for monitoring, gathering, and processing real-time data.
   4. PLC – Programmable Logic Controller
      1. An industrial digital computer which has been ruggedized and adapted for the control of manufacturing processes.
   5. SE – Systems Engineer
   6. ME – Mechanical Engineer
   7. AQE – Advanced Quality Engineer
   8. APE – Advanced Process Engineer
4. **References:**
   1. CP-WI-MFG-X59-Lot Traceability
   2. CP-WI-MFG-X321-Global Standard Lot Traceability
5. **Method:**
   1. **Tools for Data Collection**
      1. Each GHSP manufacturing facility is responsible to determine what tools or applications are needed to effectively collect and store data as required by GHSP standard and customer specific data requirements.
      2. GHSP standard systems level tools and applications
         * SE Data Pro
           + Assembly area manufacturing and component traceability
           + Historical and event logging (SCADA Database)
         * METS
           + Electronics area manufacturing and component traceability
         * CCTV video system
      3. GHSP standard equipment level tools and applications
         * LabVIEW/National Instruments
           + Function Testing
         * SigPOD
           + High speed data tracking
         * PLC
           + Primary control system for tooling
         * Vision Systems
           + Camera based inspections in manufacturing
   2. **Data Acquisition Requirements**
      1. Each GHSP manufacturing facility is responsible to determine what data needs to be collected and stored in addition to GHSP standard and customer specific data requirements.
      2. GHSP Minimum Requirement
         * Lot Traceability including but not limited to:
           + Customer finished good number
           + Serial number
           + Julien date
           + Tester I.D. #
           + Tester software revision level
           + Product software version
         * Variable test data including but not limited to:
           + All data to meet customer and GHSP requirements, which is generated from End of Line
           + Quality assurance
           + Final Function Testers or any piece of equipment determined to be a primary quality gate of customer finished goods (Examples: Pass, Fail, critical or customer specific variable data)
   3. **Data Storage Requirements**
      1. Each GHSP fulfillment location is responsible for storing all collected data in locations as defined below:

* GHSP facility server (Primary)
  + - * + For use in the automated collection and management of data on all GHSP programs to create centralized accessibility and traceability within each facility as well as reduce storage requirements at an equipment level.
* Equipment hard drive or file share system (Secondary)
  + - * + For use in management of current operational data prior to back up to central or facility server at determined timelines.
        + Also for use on legacy equipment which does not have network connectivity.
* USB or external hard drive or manual documentation (Secondary)
  + - * + For use on legacy equipment or non-serial production management of data.
  1. **Data Use and Reporting Requirements**
     1. Each GHSP manufacturing facility is responsible for determining the methods for use of data acquired to manage and control the production process. This information is to be provided to IT department for automated integration.
     2. GHSP Minimum Requirements:
        + Automated metrics, graphs, charts, reports, etc. to track all GHSP or customer required data points including but not limited to the following:
          - Lot traceability
          - Scrap ID and tracking
          - OEE
          - Critical GHSP or customer variable data tracking (i.e. Button Effort)
          - Takt/cycle count
          - Up/down time
          - Machine process parameters
          - Machine faults
          - # of key resets
          - Badge tracking
          - Shark attacks
          - Variable data startup part
  2. **Lot Traceability**
     1. During development a risk analysis is conducted, by a cross functional team (SE, ME, AQE, APE), to determine which components require lot traceability. Those components with features that contribute to a safety/critical characteristic require full 1 to 1 traceability.
     2. For safety/critical characteristics, the lot traceability information must be traceable in both directions.
        + When searching by component lot, system allows visibility to all top-level assembly serial numbers in which component was used
        + When starting with a top-level assembly, system allows visibility to lot numbers of applicable components
     3. For non-safety/critical components, lot trace information may be captured by following the Lot Traceability Global Standard.
     4. Data is auto uploaded to location as structure defined in section 5.3.
     5. Data to be audited during LPA Audits.
  3. **Part Performance Data**
     1. During development a risk analysis is conducted, by a cross functional team (SE, ME, AQE, APE), to determine which product performance parameters require capture and archival.
     2. Data is auto uploaded to location as structure is defined in section 5.3.
     3. Data to be audited during LPA Audits.

1. **Records:** N/A