Web-based Imaging Management System Working Group - WIMS

Printer Working Group
July 2005

WIMS WG Efforts

- **WIMS Protocol Document**
- **Standard for Imaging System Counters**
  - **Counter Specification**
  - **Mapping to Counter MIB**
  - **Mapping to Counter XML W3C Schema**
- **Other XML W3C Schema**
  - **Printer MIB and Related MIB objects,**
  - **WIMS and Printer Semantic Model elements**

WIMS Protocol Document

- **Purpose: To define Operations and Actions supporting Remote Third-Party management of Imaging Systems**
- **Current Document: ftp://ftp.pwg.org/pub/pwg/wims/wd/wd-wimscount10-20050323rev.pdf**
- **Status: Prototype; effort has been diverted to Counter Specification and XML mapping so that protocol will have management model elements to communicate**

WIMS Protocol Document

- **Remaining Activities:**
  - Refinement and update of section 3, Scenarios and Requirements (or generation of separate requirements document)
  - Review and Alignment check
  - Last Call and Analysis of Comments and Questions
- **Questions and Requests – In V1.0 or put for next version?**
  - Enhance to include more support of in-house Management
  - Provide more Manager-initiated operations for immediate actions

Standard for Imaging System Counters

- ## The "Counter Spec":
  - Defines the usage counters for an Imaging System (e.g., network spooler, printer or multifunction device), and the services such a system offers.
  - Relies upon separate documents for mapping of semantics to XML Schema, MIB or any protocol.

Standard for Imaging System Counters

- **Features**
  - Compromise alternative to full Multifunction Service Management Model.
  - All read-only elements.
  - Defines theme and variations on items that may of interest in considering usage of Imaging Services for billing and planning.
  - Expected to have application well beyond WIMS

Standard for Imaging System Counters

- **Status:**
  - Went into PWG "Last Call" 29 March 2005
  - Last Call comments have been addressed
  - Document has been updated, refined, retooled weekly

Standard for Imaging System Counters

- **Current Version:**
  - **ftp://ftp.pwg.org/pub/pwg/wims/wd/lcrc-wimscount10-20050629.pdf**
- **Remaining Steps**
  - **Working Group review (internal alignment)**
  - **PWG Vote - August**

Counter MIB

- **Purpose:**
  - **SNMP compatible mapping of Imaging System Counters and other Semantics for Imaging System and Component Usage and Status**
  - **MIB mapping reflected recognition that SNMP would be supported for the foreseeable future, despite emergence of Web Services based management**

Counter MIB

- **Status:**
  - **Went into PWG "Last Call" 29 March 2005**
  - **Last Call comments have been addressed**
  - **Document has been updated and reviewed**
- **Current Version:**
  - **ftp://ftp.pwg.org/pub/pwg/wims/wd/lcrc-wimscountmib10-20050616.htm**

Counter MIB

- **Remaining Steps**
  - **Final Working Group review (internal alignment)**
  - **PWG Vote - August**

Counter XML W3C Schema

- **Purpose:**
  - **XML compatible mapping of Imaging System Counters and other Semantics**
  - **XML mapping necessary for use with WIMS, and also applicable to other Web Services based management approaches**

Counter XML W3C Schema

- **Status:**
  - **Last worked on over a year ago**
  - **Semantics has evolved since then**
- **Current Version:**
  - **none**
- **Remaining Steps**
  - **Major rework of existing documentation**
  - **Alignment with Counter MIB and Counter Spec**

XML W3C Schema of Printer and Associated MIBs

- **Purpose: Provide XML mapping of extensive printer service and device status and management information in**
  - **RFC2790- HR MIB**
  - **RFC3805- Printer MIB V2**
  - **RFC3806- Printer Finishing MIB**
- **Current Versions:**
  - **Although these versions are about a year old, the source information has not changed in that time**
  - **ftp://ftp.pwg.org/pub/pwg/wims/schemas/**
- **Next Steps**
  - **Unclear whether these should retained as resources or subjected to more formal documentation procedures**

WIMS XML W3C Schema

- **Purpose: Provide XML mapping of Semantic components, including those contributed by WIMS.**
  - Alerts, Events, Report, Resource,Subunits, Schedule,, WIMS Base, WIMS Type
- **Current Versions:**
  - **ftp://ftp.pwg.org/pub/pwg/wims/schemas/**
- **Next Steps**
  - These versions are about a year old and will need modification to track potential changed to WIMS document
  - Unclear whether these should retained as resources or subjected to more formal documentation procedures

Resolution of Counter Spec & Counter MIB Last Call Comments

- Last call Comments and considerations are documented in

  - ftp://ftp.pwg.org/pub/pwg/wims/wd/LastCall Comments/CounterLastCallCommentsAddr essed20050511.pdf

- The more encompassing are discussed in the following slides

Counter Spec Last Call Comments

- **Counter Spec appears to disagree with the Job/Document/Media hierarchy in the Semantic Model**
    - Although the terms are similar, the two documents do not refer to the same things. In the Counter Spec, "Job" just distinguished the product of a user submission from waste or maintenance products ; "media used" identified the type and quantity of media consumed, not the media desired for a specific job.
    - This comment touched on many potential confusing terms. The specification was extensively reworked to use different terms (e.g., Work in place of Job) and to provide an exhaustive definition of terms as used in section 2.
    - There is no "Job" specific counting, which may be a deficiency

Counter Spec Last Call Comments

- Some definitions in the MIB are inconsistent with those in the Specification. Indeed, some counter definitions in the specification were unclear or inconsistent.
  - The Specification was made to contain the primary definition, with the MIB referencing where appropriate.
  - Specification definitions were reviewed and structured to refer to the expanded Section 2, Terminology, and to avoid multiple descriptions of the same counter types.
  - Counter names were structured to be self defining in terms of the Section 2 Terminology.

Counter Spec Last Call Comments

- The terms "black", "blank", "color" and "highlight color" should be clarified.
  - These terms, as well as for many others were clarified in the expanded terminology.
  - On review, "black" was replaced with "monochrome"
- There was some confusion over the relation between service specific and aggregate counters.
  - Addional and revised diagrams and text were included in Section 4.

Counter Spec Last Call Comments

- The definitions for each counter should include definitions that are (1) consistent with any repeated language in the Counter MIB descriptions, and (2) completely specify the attributes of the counter. The Counter Spec. should explicitly define and state the "units" of each count as well as the initial, reset value and it's "rollover" value (i.e. how many bits, signed or unsigned).

    - The tables defining the counters were reworked as described previously, using the terms defined in Section 2
    - Units, initial value, and precision were added for each counter entry in Section 5.

Counter Spec Last Call Comments

- It was pointed out that no Requirements Document or section existed. This Requirements discussion is necessary before a standard can be submitted for Vote, according to the PWG Process document.

  – Section 3 was added, providing the rational for and the requirements of the Counter Specification

Counter MIB Last Call Comments

- The Counter MIB was extensively modified to address last call comments. These changes are listed at the back of the current document in Appendix A, the Change Log

- The following slides identify some of the more significant changes.

Counter MIB Last Call Comments

- As described previously, there were inconsistencies in definitions and terminology between the Counter MIB and the Spec. However, the MIB also went into subunits, a class not covered by the Counter Spec
  - The terminology section was structured to identify the source of the terms, rather than provide the definition.
  - Terms that were not covered in the Counter Spec were referenced to other documents, such as the Printer MIB. Some few were defined in the document
  - Counter names were aligned with changed names in the Counter Spec.

Counter MIB Last Call Comments

- There is inconsistency between the counter names in the Counter Spec and in the Counter MIB.
  - The MIB follows recommendations for MIB object names that would be inappropriate for names in the counter spec. Further, for portability among compilers, names are restricted to 31 characters, an unreasonable constraint for the Counter Spec.
  - A section was added on how MIB counter object names were mapped from Counter Spec counter names

Counter MIB Last Call Comments

- Again, no Requirements Document or section existed. This Requirements discussion is necessary before a standard can be submitted for Vote, according to the PWG Process document.

  – Section 3 was added, providing the rational for and the requirements of the Counter MIB.