August 2004.

The LEPP Drafting office is proposing a change to the current LEPP drawing number system for mechanical assemblies. It will be based on the current numbering system (see below for details) while adopting a more standard practice of assigning a drawing number to each part. Each individual part would then be completely documented in that unique drawing number. This allows for more efficient use of CAD file creation in that parts that are used unchanged from one assembly (project) to another are simply called out as an existing part # eliminating duplication of parts & effort. Each CAD part, sub-assembly and assembly would have its drawing number as it's CAD filename. This also allows for better use of the technologies inherent to current CAD systems such as AutoDesk Inventor. *It is important to note that there will not be any changes to existing drawings that are archived or indexed. The new system would simply be an extension of the existing system. (Both systems are now in use - TOC 8/17/04)*

The current numbering system:

This current drawing number schema has been used in the laboratory for many years. It has the form of either 4-digit or 7-digit drawing number that completely defines a particular device. The 4-digit system is typically reserved for Control Wiring Diagrams in the 4000 series or for some RF Systems in the 3000 series. There are also some 4-digit drawings that are related to the older 2 GEV & 10 GEV systems and are considered legacy data at this time.

The "modern era" LEPP drawings (other than 4000 series control drawings) use a 7-digit schema that has the form AAAA-BBB. The AAAA portion refers to the particular drawing series and the BBB portion is the drawing number in that series. A MS Excel spread sheet (dwg-nums.xls) which outlines the drawing series has been posted to the LEPP Design Drafting web pages. Both the 4-digit and 7-digit system add successive sheet numbers to the drawing giving it the form AAAA-BBB-CC, where CC becomes the sheet number. Each drawing number can then accommodate many sheets but ALL sheets in a given drawing number are the same physical size; A, B, C, D, or E sized.

The proposed schema:

While maintaining the current 4-digit or 7-digit drawing number form, we propose simply appending 3 groups of 2-digit numbers (without hyphens) as follows:

1234-567-XXYYZZ

1234-567   Main assembly/project number *(existing standard)*.

XX   Parts/subassemblies at the top assembly level.

YY   Parts/sub-sub-assemblies at the **XX** (next lower) level.

ZZ   Parts/sub-sub-assemblies of the **YY** (next lower) level.

Example of a possible scenario:

1234-567	Project number.
1234-567-**00**	Top level assembly.
1234-567-01	Part #1 in assembly –00.
1234-567-**02**00	Part #2 in assembly -00, a sub-assembly.
1234-567-0201	Part #1 in sub-assembly –0200.
1234-567-020**2**	Part #2 in sub-assembly –0200.
1234-567-0203	Part #3 in sub-assembly –0200.
1234-567-**02**04**00**	Part #4 in sub-assembly -0200, a sub-sub-assembly.
1234-567-020401	Part #1 in sub-sub-assembly –020400.
1234-567-020402	Part #2 in sub-sub-assembly –020400.
1234-567-03	Part #3 in assembly –00.
1234-567-04	Part #4 in assembly –00.
1234-567-0500	Part #5 in assembly –00, a sub-assembly.
1234-567-0501	Part #1 in sub-assembly –0500.
1234-567-0502	Part #2 in sub-assembly –0500.

Anytime you see '00' in the last 6 digits of a drawing number you have an assembly at that level.

CAD file name and drawing annotation changes.

The practice of including the drawing size (A, B, C…) in the CAD filename would be discontinued to save character space.

The practice of including zeros as place holders (as in the old system; ex. 4992-000) would be discontinued since zeros, in the form 1234-567-00, would indicate an assembly item. Also, the item number (balloon number on a drawing) that a part receives may or may not correspond to the drawing number, especially since parts from other assemblies/projects can simply be plugged into an assembly without needing to change to drawing number. Ex: 1234-567-08 may be part #22 in 4567-123-00.

Having enough numbers with 2-digit groups.

In the event that more than 99 parts are required in any given (sub-) assembly, we would simply adopt a work around such as a shift to letters after all numbers are used.

Example: 1234-567-0299   1234-567-99
              1234-567-02aa   **OR**   1234-567-aa
              1234-567-02ab   1234-567-ab
                                                                      1234-567-ac00
                                                                      1234-567-ac01
                                                                      1234-567-ac02

For this reason, we would discontinue the practice of including a revision letter designation in the drawing number. The particular revision letter of a drawing can be

found on every sheet in the title block, revision history column or in the drawing index (NUMO or other).

Tracking old revisions.

We propose archiving DWF and/or PDF files of the actual drawing sheets for older revisions as opposed to copying and archiving the 2D/3D CAD files for that design. While there are times that one may want to revert back to an original version of a 3D model, the advantages of efficient disk storage gained by keeping smaller DWF/PDF files needs to be considered.

Drawing index (NUMO or other) issues.

The only substantial change to NUMO will be determining if it can accommodate the 1234-567-XXYYZZ drawing number schema, in various forms (-00, -0102, -010203). We still need to track sheet size, sheet # & revision letter, title, dates & authors as well as CAD file existence or not (presently defined by an asterisk). NUMO should still function to handle the current drawing number design.

Unanswered Questions:

At this time we have not addressed the storage of the hard copy drawings & plots. It has been our past practice to keep all drawings of the same 4-digit or 7-digit drawing number the same physical size (A, B, C etc) and store them together in our flat files. The proposed schema breaks the drawing down to a finer level but all sheets of a given drawing number will still be the same size for convenience. We will generate more sheets so maybe we need to purchase additional flat files for drawing storage, or stop storing paper drawings all together.

More???