CUBIT Capability Proposal

Technical Area Geometry, Meshing, Infrastructure, GUI, Graphics, etc..	**Technical Lead** Cubit Developer in charge of technical area
MBG	Michael Brewer

MRD Description
Describe the capability in terms of how a user would see it.

Improved (more robust) Mesh-based geometry import.

SRS Description
What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

Make mesh-based geometry import more robust.

Justification
Describe why this is important and what impact it will have if it is implemented. (or not implemented).

We have several examples of meshes that MBG fails to import. These are generally very complex models, often OUO, and are difficult to debug individually. The problems tend to be caused by MBG creating complex loops of curves (curves self intersect, are tangent to other curves, etc.). For some examples, the culprit is an invalid topology (often created in other meshing packages), but the error messages from Cubit give no indication of that. In a sense these are all just bug fixes, however, I feel we should set some time aside specifically to work on them because
a) it will require quite a bit of time and
b) the individual problems are typically low-priority, but when taken *en masse*, I feel their priority should be higher.
One part of this effort would be trapping for topology problems that are more common in meshes generated in other meshing pachages.

Resources Who will work on this	**Time estimate** How much time will it take in man-weeks	**Targeted Release** 10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)
Michael Brewer	4-6	10.2

Submitted By:	**Date:**
Michael Brewer	3-31-2006