more static support provided by GKS-3D. Yet it provides a migration mechanism to address the needs of the strict compatibility proponents.

At the last ISO TC97/SC21/WG2 (Computer Graphics) meeting, a statement on the “Criteria and Guidelines for Compatibility between GKS (GKS-3D) and PHIGS” was written and approved. This same statement was approved by X3H3 (operating under ANSI procedures). The statement is

1. GKS (GKS-3D) and PHIGS should be considered distinct within a family of graphics standards.
2. GKS (GKS-3D) and PHIGS should have the same registration for graphical items.
3. Concepts that are the same should be expressed in the same way. Concepts that are different should not be described with the same wording.
4. While GKS (GKS-3D) source programs will not run directly on PHIGS, it must be possible to demonstrate that at least one mechanism exists which allows GKS (GKS-3D) source programs to be run on PHIGS.
5. Primitives and attributes as they are conceptually generated at structure traversal time in PHIGS should be identical to those of GKS (GKS-3D).
6. Picture exchange between GKS (GKS-3D) and PHIGS through CGM should be possible.

The first point of the statement chose Scenario B or C over A. Points 2 and 3 need to be stated but are of no great impact in this discussion of compatibility. Point 4 refined point 1 in choosing Scenario B over C. It accepted the bridge (or a shell) mechanism from GKS to PHIGS as a reasonable compromise.

Point 5 required a change to GKS-3D. The PHIGS Name Set functionality will be drafted as an addendum to the GKS-3D Standard. A clip before viewing (modeling clip) will be added to PHIGS to accommodate the GKS-3D pipeline. This is a significant development, since it says that the onus of compatibility rests not only with PHIGS but with GKS (GKS-3D) as well. Point 6 required PHIGS to include metafile functions like READ and WRITE ITEM TO METAFILE.

The latest draft of PHIGS includes the new functionality required to adhere to this compatibility statement. The ANSI document has separated the less stable elements and consigned them to an identifiable portion. Readers with interest in PHIGS and GKS are encouraged to submit comments, especially on the newer, less stable areas.

There is no single solution to the issue of compatibility. There are many constituencies with varied requirements that no single standard can address without sacrificing something, be it speed, functionality, or size. The same issue has been discussed with respect to general-purpose computers versus special-purpose (lean and mean) systems.

What has resulted seems to be the first step toward a reasonable compromise. The issue of compatibility will continue to be discussed. The next layer of debate will probably include the level of complexity of the shell mechanism: Which would be acceptable and which standard should change to accommodate the other on the individual points of difference.

An orthogonal but related issue will concern a compatibility statement involving CGM and CGI and their relationships with GKS (GKS-3D) and PHIGS. The CGM group is already working in this area, developing a GKS-M and investigating 3D support.