

## DISCUSSION

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Authors: Rumble

Daniel Vinard: 1) Is STEP presently applied by Industry? 2) Are the organizations presently using Z99 (including TIMKEN, FAG and SKF) out of touch with and ignored in the development of STEP? 3) Are the concepts of Material, Composite, Component and Final Product included in STEP? is it SQL based? Is it object oriented? 4) Does STEP define a format, if yes, has this format been tested on a variety of materials (Ceramic, Glass, paper composites...)

5) When will STEP be available?

John Rumble (author's response): 1) As of September 1991 Sept, STEP is still under development and not yet finalized. However, software vendors are already writing implementations. 2) I am not aware of any groups using Z99. However, that does not mean it is not being used, just that I don't know about it. 3) The STEP materials model is on track for initial ballot in 1992. Until then, changes will be made. The STEP models use EXPRESS which is not SQL based. It could support object-oriented implementation.

4) STEP (part 21) has a well defined physical file format. 5) The first ISO Draft International Standard for STEP is anticipated in late 1992.

Norman Swindells: I can support the reply of Dr Rumble to Dr Vinard that industrial companies are strongly involved in the development of STEP. Further, I can report that, at a recent meeting, the CEN Working Group on STEP decided to include the materials model in their recommendations for new work to be undertaken by CEN. At a CEC discussion meeting in April this year it was reported that, following a survey, the French Government had decided to support the development only of STEP in this area.