General Discussion: *Where do we go from here?*

Deepak Kapur*

In this last session of the workshop, the following topics were raised for discussions by the participants.

1. Do we need a common meta logic? If so, what should it be?
2. How can we build a data base of machine-checked proofs based on past accomplishments?
3. How can we monitor the progress of different theorem proving projects vis a vis QED?
4. How should the QED mailing list be administered?
5. When and where should the next meeting be? What form should it take?

Note: We briefly elaborate on these topics. Other participants are requested and encouraged to inform me about the salient points that I might have missed.

Randall Holmes announced that he had some ideas about a common meta logic for different theorem provers and proof checkers. He was planning to write a position paper based on those ideas for sharing with others. That paper would be available on Holmes' web page.

Paul Jackson volunteered to maintain a data base of machine-checked proofs. He requested other participants to send him pointers to such data bases being maintained by their respective groups. Jackson would inform the QED mailing lists about the site of such a data base and how it could be accessed, and later, the contents of this data base.

Considerable interest was expressed in learning about the continued progress being made by different theorem proving and proof checking systems. It was suggested that new developments and progress should be shared with the community by posting them on the QED mailing list.

*e-mail: `kapur@cs.albany.edu`

A concern was raised that the QED mailing list experiences occasional bursts of mail messages. Traffic volume increases considerably, almost to the extent that it becomes difficult for many of us to keep track of the discussion. The mailing list is inactive during most of the time though. How does one maintain a steady flow of contributions to the mailing list? A moderated list was proposed as an alternative, but little need was felt for this change. It was proposed that participants post news items of interest on the mailing list on a regular basis. Kapur volunteered to post the abstracts of the papers appearing in *J. of Automated Reasoning* soon when a new issue comes out. Roman Matuszewski promised to do the same for the Mizar *J. of Formalized Mathematics.* Developers and users of theorem provers and proof checkers were encouraged to post articles on new developments and progress related to QED activities made by their groups.

There was unanimity that both the workshops had been very helpful in bringing researchers together and highlighting most issues related to the QED project. The first workshop was mostly to familiarize with each other's background, work and interests, and how they perceived QED and their work in relation to QED. This was reflected in discussions as well as the round table organization. The second workshop has been oriented towards a more structured presentation of topics of interest and relevance to QED followed by discussions. There was a view that the next workshop should be in the form of extended abstracts/papers directly contributing to QED, and a proceedings instead of a report could be produced at the end of the workshop. Most participants felt that would be premature, and that it is good to continue with the format of the second workshop with some minor changes.

Piotr Rudnicki agreed to look into the possibility of organizing a workshop at Banff, Canada, sometime in mid May, 1996. No need was felt to change the way the next workshop should be organized.