As the actual software systems tend to be more and more complex, the problem of assessing their correctness and other similar safety properties is of increasing importance. Thereby to avoid costly redesign of completed systems, such estimations should be performed already in the phase of planning and testing the system, i.e. during system specification and system validation.

In this session, three papers are presented, dealing with various aspects of the above-mentioned problem area.

The first paper on *Communication Mechanism Independent Protocol Specification: A Case Study*, written by Y. Sun from and H. Yang, proposes a specification method based on Hoare's *Communicating Sequential Processes*. As a merit of this approach, for verification the communication processes can be modeled easily as synchronous mechanisms, independently of whether in real implementation this communication is realized in a synchronous or an asynchronous way. This property is stated in terms of two theorems which prove that a protocol designed correctly under a synchronous communication mechanism is also correct independently of the communication processes which are really used.

The second paper, *Software Monitoring and Debugging Using Compressed Signature Sequences*, by I. Majzik presents an approach how to support the run-time monitoring of software by providing efficient signature sequences which can be used to document the program traces and to analyze them in case of detected errors. The length, however, of such signature sequences to be stored in a diagnostic processor can cause storage problems. Therefore, in the paper two methods are presented to compress such signature sequences. Detailed measurements illustrating the efficiency of these methods are exhibited.
The third paper is *Preliminary Analysis Cycle for B-Method Software Development*, by S. Taouil-Traverson and S. Vignes. The paper presents a way to base system specification on Hoare logic. The main advantage is that not only continuous and refined proving of system properties is possible, but also very naturally test beds for the final integration test of the system can be derived.