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**REPORTRAPPORT**

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**BS-N9601 1996**

Report BS-N9601  
ISSN 0924-0659

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The Netherlands

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SMC is sponsored by the Netherlands Organization for Scientific Research (NWO). CWI is a member of ERCIM, the European Research Consortium for Informatics and Mathematics.

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# Control and Verification of Industrial Hybrid Systems Using Models Specified with the Formalism $\chi$

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## **Abstract**

Control and verification of hybrid systems is studied using two industrial examples. The hybrid models of a conveyor-belt and of a biochemical plant for the production of ethanol are specified in the formalism  $\chi$ . A verification of the closed-loop systems for those examples, consisting of an interconnection of the control system and the controller, is made. A control synthesis procedure is presented, with which controllers for hybrid systems can be synthesized.

*AMS Subject Classification (1991):* 93C83, 93C15, 68N05.

*Keywords and Phrases:* Hybrid systems, modelling of hybrid systems, verification, control synthesis, formalism  $\chi$ , industrial applications of hybrid systems.

*Note:* This note reports on the investigation by the author, a master level student, during his stay at CWI.

Number of pages: 32

This note has also appeared as report WPA420090 at Eindhoven University of Technology, Department of Mechanical Engineering, Section Systems Engineering and is available via:

<http://www.tue.nl/wtb/wpa/se/fey/fey.html>