DEVELOPMENT OF EVENT REPORTING (E-53) STANDARD IN GENERIC EQUIPMENT MODEL LAYER FOR SEMI AUTOMATION TOOL

CHETANA H. KHAIRNAR, A. C. PHADKE, P. B. MANE AND HITENDRA S. KHAIRNAR

Abstract

Semiconductor Equipment and Materials International (SEMI) Standards [8] are written documents in the form of specifications, guides, test methods, terminology, practices etc. They are voluntary technical agreements between suppliers and customers, aimed at improving product quality and reliability at a reasonable price and steady supply. SEMI is the proprietary communication mechanism for communication between two Semiconductor Processing Equipments. Currently EuPhore Test Application tool is in the developing stage for testing the SEMI Library (Dynamic Link Library) and its compliance. The replacement of the processing equipment in the semiconductor Fabrication unit requires changes in the software but as this testing tool is compatible to SEMI standards, there is no overhead of changes in the host software. EuPhore testing tool takes care of the compatibility between the host and equipment.

The complete communication protocol consists of four layers namely SECS-1/HSMS layer, SECS-2 layer, Generic Equipment Model layer (GEM) [9], and Application layer. The SECS-1/HSMS layer is already developed. This paper presents the implementation of the Event Reporting (E-53) standard in GEM layer. It is implemented in C# DOT NET to facilitate the windows application and Web application for remote communication between host and equipment. This standard addresses the communication needs of semiconductor equipment and other factory objects, such as cell controller or recipe servers, with respect to the timely collection and reporting of data. The developed standard provides a general-purpose set of event reporting services to the equipment suppliers to achieve the compatibility with the host software in the semiconductor Fabrication Unit.

Keywords: SEMI, EuPhore, DLL, FAB, GEM