Abstract. Timing diagrams are well-known in the hardware electronic domain. They are the main key in understanding digital systems, e.g. bus transaction protocols. Timing diagrams are also invaluable in development of Real-Time Systems (RTSs).

Since embedded systems became more complex, software and hardware development process have infiltrated each other. In the software engineering, UML is considered to be the industry standard for systems development. Because of the need of software-hardware codesign timing diagrams were added to the UML 2 standard. Since than a lot of examples for misusing timing diagrams have appeared in the literature. Misunderstanding of the idea lying behind timing diagram is common even among well-known UML' authorities. The problem is that timing diagrams are being used for modeling of business system but timing diagrams have not been created for this purpose. The aim of this paper is to show examples of usage timing diagrams in theirs intended application. As illustrative examples, two well-known specifications have been chosen – data transmission in RS-232 standard and data transfer via the PCI bus.

Keywords: timing diagrams, UML, software-hardware codesign