Designations in Consistency Rules

The consistency rules presented in this article were proposed in the paper presenting the e-CMDA method [5]. That method allows building a complete and consistent software architecture of IT systems. The e-CMDA method consists of the e-CMDA algorithm, a set of consistency rules presented in Table 4, and the FBS metric (entropy measurement) related to the functional, behavioral and structural dimensions of the software architecture [8].

Table 3 shows abbreviations of most UML diagram elements. By combining the abbreviation of the UML diagram with the abbreviation of its element and then the abbreviation of another diagram with the abbreviation of its element, we obtained a list of consistency rules used in the e-CMDA method, which we have shown in Table 4.

|  |  |  |
| --- | --- | --- |
| **Symbol** | **UML Element** | **UML Diagram** |
| a | Actor | Use case |
| b | Attribute | Class |
| c | Class | Class |
| d | Pseudostate | State |
| e | AcceptEventAction | Activity |
| f | CombinedFragment | Sequence |
| h | Operation | Class |
| i | Instance | Activity |
| iSTATE | inState\_objectNode | Activity |
| l | Lifeline | Sequence |
| m | Message | Sequence |
| n | ControlNode | Activity |
| o | Execution | Sequence |
| pH | Horizontal Partition | Activity |
| pV | Vertical Partition | Activity |
| p | Partition (pH or pV) | Activity |
| q | Component | Component, Deployment |
| r | Region | State |
| s | StateInvariant | Sequence |
| t | Transition | State |
| u | UseCase | Use case |
| v | Activity, Action | Activity |
| w | Node | Deployment |
| y | Interface | Component, Deployment |
| z | Association | Class |
| z«cl» | DirectedRelationship between classes | Class |
| z«cmp» | Association between components | Component, Deployment |
| z«control» | ControlFlow | Activity |
| z«data» | ObjectFlow | Activity |
| z«dep» | Dependency | Component, Deployment |
| z«func» | Association between UseCase and Actor | Use case |
| z«link» | CommunicationPath | Deployment |
| z«uc» | DirectedRelationship between UseCases and Actors | Use case |