

platform. Figure 6 presents the resulting detailed High-level data model.

5.3. Logical Data Model

The integration of the Dublin Core and IODEF at the level of the logical data model was based on the process proposed by Batini et al. [22]. First, models were analysed and compared in order to determine the relationships between concepts. Common properties and few conflicts were identified in this step. Then, after resolving conflicts, all concepts were placed on a common diagram. Such a model required restructuring, including a common convention for the names, adding the missing attributes and creating new relationships. Finally the new model was tested against the qualitative criteria: completeness, correctness, minimality and understandability. The LDM is presented in Figure 7.

6. Conclusions

The smart grid is a new application domain for information security which requires intense research efforts in various fields. One of the subjects which demand particular attention is the development of a security information sharing platform. This was identified as a priority area of the research and development in the grid.

In the paper a novel approach for proper identification and representation of the data exchanged in the platform was proposed that responds to the challenges inherent to the highly distributed and heterogeneous nature of the grid. The results of application of the approach (described in Section **Error! Reference source not found.**) proved its suitability and effectiveness.

The approach described in this paper can be applied to many application domains where similar challenges are faced. It is especially suitable in the contexts where communication problems arise due to the large geographical distribution of the involved enterprises and institutions as well as their high diversity in regard to size.

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involving the development of the business model and their feedback on the data model developed by the authors.

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