Architecture-Level Management of Open Source Software Legality Concerns

- **Studying the significance of licensing concerns at the architectural level**
  Due to the large number of open source licenses with different versions, it is confusing and hard for software development companies to address the legal aspects of the OSS. In many cases this matter is just ignored, leading to serious legal problems. We plan to investigate the feasibility and demonstrate the significance of the legality problems earlier in the software development phases, i.e. architectural design.

- **Exploring software patterns for open source legality concerns**
  We plan to investigate the significance of software patterns in addressing the problems of open source licensing and documenting corresponding solutions. For instance, some of the patterns can be used to describe architectural design decisions motivated by legal concerns associated with open source licensing issues when developing software.

- **Studying how to represent legal aspects of OSS in UML**
  We plan to study the suitability of UML profiles to express the concepts and constraints implied by open source licenses. For instance, we will examine the possibility of using elements of UML profiles such as stereotypes to design corresponding tool support.
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- **Studying widely adopted architectural styles from a legality perspective**
  The software community has been documenting and sharing proven architectural solutions as architectural styles. We plan to study how sensitive and risky an architectural style is with respect to the legality issues of open source licenses. Another question to examine is how to fine tune these styles to overcome certain legal concerns. Furthermore, are there any OSS license friendly styles? Which styles fit better with which licenses?

- **Tool support for architecture-level management of OSS legality concerns**
  We plan to develop a new kind of open source legality support tool focusing especially on validating architectural models against open source legality and proposing remedial architectural solutions.

- **Empirical evaluation of architecture-level OSS legality tools**
  We plan to gather empirical data on the effects of using the tool to be developed related to a number of representative case studies.