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Resolving Requirement Conflicts at Runtime

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Requirement conflicts exist when requirements are incompatible or contradictory. This typically has a negative effect on team performance, resources, and software development as well as subsequent quality. Requirement conflicts involve a multitude of factors and defining and therefore resolving them becomes **relatively dependent on the conflict context**.

At *runtime*, new changes occur due to environmental changes and initial assumption and requirements might not hold. As a result, requirement conflict resolution needs to be adaptive.

Aim: Create framework for autonomous systems to *effectively resolve requirement conflicts* at runtime, only involving humans when necessary.



Example Requirement Conflict

Current Results



Interviews Study was conducted with practitioners to understand current practices for requirement conflict management and different conflict types in practice to be able to create dynamic strategies in the future. We found the cause of conflict to be important for identifying what the effective conflict resolution strategy is.



on causes

Current Publications



Welzel et al. (2024). Not All Conflicts Are the Same: An Empirical Study of Requirement Conflicts in Practice. 50th Euromicro Conference on Software Engineering and Advanced Applications (SEAA).



Welzel et al. (2024). Increasing the Confidence in Security Assurance Cases using Game Theory. In Proceedings of the 19th International Conference on Availability, Reliability and Security (ARES).



Future work will focus on framework for dynamic conflict resolution using ex. game theory and how to effectively involve humans.



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