Applying Failure Modes and Effect Analysis Concept in a Global Software Development Process

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Abstract : SIDIA is a research and development (R&D) institute that belongs to Samsung's global software development process. The SIDIA's Model Team (MT) is a part of Samsung's Mobile Division Area, which is responsible for the development of Android releases embedded in Samsung mobile devices. Basically, in this software development process, the kickoff occurs in some strategic countries (e.g., South Korea) where some software requirements are applied and the initial software tests are performed. When the software achieves a more mature level, a new branch is derived, and the development continues in subsidiaries from other strategic countries (e.g., SIDIA-Brazil). However, even in the newly created branches, there are several interactions between developers from different nationalities in order to fix bugs reported during test activities, apply some specific requirements from partners and develop new features as well. Despite the GSD strategy contributes to improving software development, some challenges are also introduced as well. In this paper, we share the initial results about the application of the failure modes and effect analysis (FMEA) concept in the software development process followed by the SIDIA's model team. The main goal was to identify and mitigate the process potential failures through the application of recommended actions. The initial results show that the application of the FMEA concept allows us to identify the potential failures in our GSD process as well as to propose corrective actions to mitigate them. Finally, FMEA encouraged members of different teams to take actions that contribute to improving our GSD process.
Keywords : global software development, potential failures, FMEA, recommended actions
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