Continuous Context-Aware Device Comfort Evaluation Method - DTU Orbit (25/01/2016)

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Mobile devices have become more powerful and are increasingly integrated in the everyday life of people; from playing games, taking pictures and interacting with social media to replacing credit cards in payment solutions. The security of a mobile device is therefore increasingly linked to its context, such as its location, surroundings (e.g. objects and people in the immediate environment) and so on, because some actions may only be appropriate in some situations; this is not captured by traditional security models. In this paper, we examine the notion of Device Comfort and propose a way to calculate the sensitivity of a specific action to the context. We present two different methods for a mobile device to dynamically evaluate its security status when an action is requested, either by the user or by another device. The first method uses the predefined ideal context as a standard to assess the comfort level of a device in the current context. The second method is based on the familiarity of the device with doing the particular action in the current context. These two methods suit different situations of the device owner’s ability to deal with system security. The assessment result can activate responding action of the device to protect its resource.

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