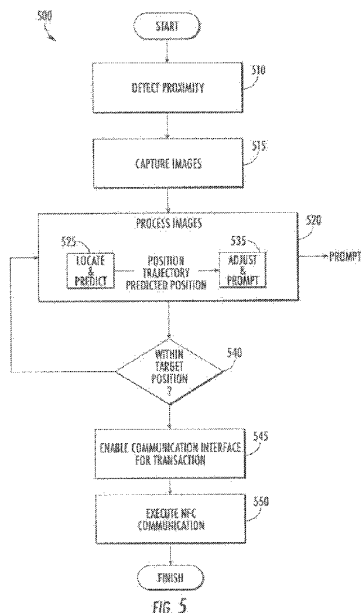




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(54) **Title:** SYSTEM AND METHOD FOR GUIDING CARD POSITIONING USING PHONE SENSORS

(57) **Abstract:** A position alignment system facilitates positioning of a contactless card in a sweet spot in a target volume relative to a contactless card reading device. Alignment logic uses information captured from available imaging devices such as infrared proximity detectors, cameras, infrared sensors, dot projectors, and the like to guide the card to a target location. The captured image information is processed to identify a card position, trajectory and predicted location using one or both of a machine learning model and/or a Simultaneous Localization and Mapping logic. Trajectory adjustment and prompt identification may be intelligently controlled and customized using machine-learning techniques to customize guidance based on the preference and/or historical behavior of the user. As a result, the speed and accuracy of contactless card alignment is improved and received NFC signal strength is maximized, thereby reducing the occurrence of dropped transactions.

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