SUMMARY

This thesis focuses more on the Near Field Communication (NFC) technology, with a special emphasis on Web-NFC. This work tries to democratize access to programming NFC tags by creating a web tool that is simple to use. The current project has proven that, in spite of the much longer history of development and effective implementation in everyday life, NFC still faces certain issues; in point of fact, it even struggles with making the process of NFC tag programming accessible not only to an average person but also in general.

The primary contribution of the project is the web application developed using Web-NFC, thereby enabling a more intuitive and efficient way for users to interact with NFC tags. While traditional approaches demand that third-party applications be installed by the user, with WebNFC, the user will be able to program an NFC tag directly from a web browser, reducing the bar to entry. This web-based solution will enable the functionality to write different types of data into NFC tags: texts, URLs, contact records, and even Wi-Fi credentials—all through an intuitive interface.

The practical implementation of the web application involved all necessary stages: from prototyping to back-end and front-end development, debugging, and considerable testing. The main concern of the user interface is to leave it simple but at the same time flexible, available for a maximal number of possible cases concerning mobile devices, which nowadays are the very tools used for these interactions via NFC.

The present study has illustrated the effectiveness and applicability of Web-NFC technologies with real-world examples and scenarios by which web applications can manifest their potential in areas such as personal data management, commerce sites, or industrial applications. This versatility provides an apt reason to use NFC-enabled devices by virtue of already being the finest method of exploring innovative new use cases.

The current thesis makes valuable contributions to the knowledge that already lies in the field of NFC technology. The web application developed now turns into a valuable tool for beginners and experienced users alike to be capable of using both the potential of NFC and the methodologies available until now without the concomitant technical difficulties of the rather cumbersome means utilized previously. This opens

new popularization avenues for applying NFC technology to a very broad range of purposes, finally enriching the user experience and expanding the utility scope.

This thesis will therefore present the viability and the workability of designing NFC tags using the Web-NFC technology and help in tracing a path toward future development and higher adoption of the technology. The study, through the development of an approach to overcome the limitations of traditional methods of programming NFC, provides a realistic solution highly likely to change the way users associate themselves with NFC technology. After such working experience, there comes a basis for huge potential integration of NFC in every day and all kinds of professional spaces: new opportunities for innovation and development.