

Capacitive Fingerprint Sensors Patent Landscape

New strong IP enthusiasm and new players such as Apple are leaving their imprint on the market

REPORT OUTLINE

- Capacitive fingerprint sensors.
- Patent Landscape.
- January 2015.
- PDF & Excel file.
- €3,990 (corporate license).

KEY FEATURES OF THE REPORT

The report provides **essential patent data** for fingerprint sensors of the capacitive type including:

- Time evolution of patent publications and countries of patent filings.
- Current legal status of patents.
- Ranking of main patent applicants.
- Joint developments and IP collaboration network of main patent applicants.
- Key patents.
- Granted patents near expiration.
- Relative strength of main companies IP portfolio.
- Overview of patent litigations
- Capacitive fingerprint sensor IP profiles of 15+ major companies with key patents, partnerships, and IP strength and strategy.

The report also provides an extensive **Excel database** with all patents analyzed in the study.

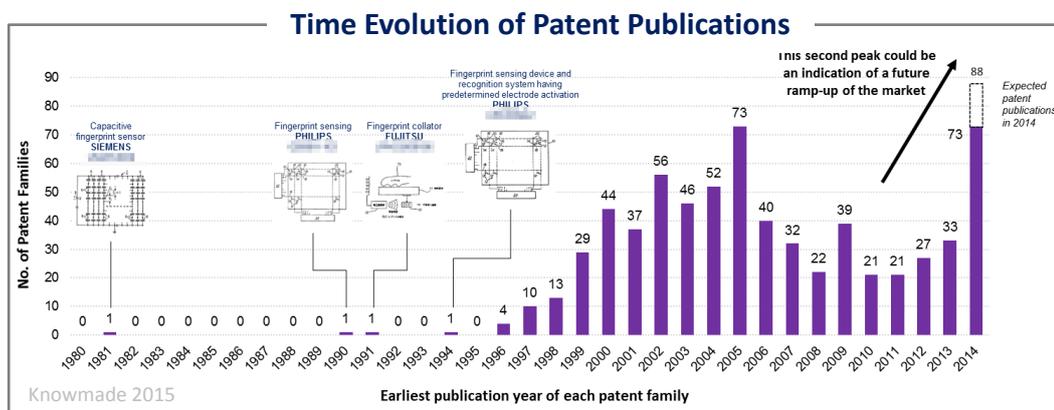
OBJECTIVE OF THE REPORT

- Understand the IP landscape for capacitive fingerprint sensors.
- Identify key patents.
- Understand trends in capacitive fingerprint sensors IP.
- Identify the major players in capacitive fingerprint sensors IP and the relative strength of their patent portfolio.
- Identify new players in capacitive fingerprint sensors IP.
- Identify IP collaboration networks between key players.
- Identify main patent litigations.

SECOND WIND IN THE CAPACITIVE SENSING TECHNOLOGIES

To this date, **fingerprint sensing technology** is the most reliable and widespread biometric technology and fingerprint sensors are well developed. This patent landscape focuses on **fingerprint sensors using capacitive sensing technology**. The domain of capacitive fingerprint sensors is **closely linked to the development of electronic devices**, especially smartphones and the like, and the growing demand for security. Capacitive fingerprint sensors of a new generation have been incorporated in the most recent smartphones of companies like **Apple** or **Samsung**.

More than **650 patent families** related to capacitive fingerprint sensors have been published worldwide up to October 2014. In the early 80s, **Siemens** published the 1st capacitive fingerprint sensor. However, the 2nd patent, published by **Philips**, came out only a decade later and the number of patent applications really started to rise in 1997. This phenomenon lasted until 2005. From that year, the number of new patents started to decrease and stagnate. However, a **2nd phase of development is currently occurring** as revealed by the increasing number of new patents published since 2012.

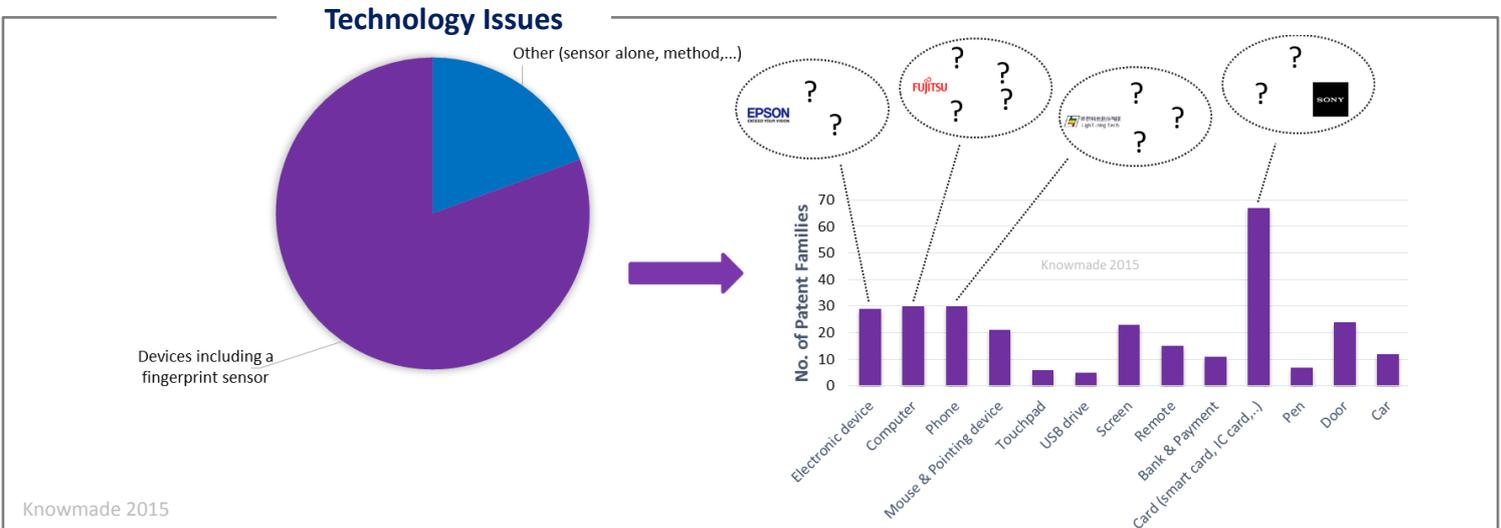


The capacitive fingerprint sensing technologies involve **more than 100 different applicants**, mainly semiconductor and electronics companies. The main IP holders in the domain are **Seiko Epson, AuthenTec, Sony** and **STMicroelectronics**. With the 2nd phase of development, new players are emerging, especially **Apple** is coming into play strongly lately in the capacitive fingerprint sensor field.

The pioneer patents on capacitive fingerprint sensing technology are no longer in force and more than **200 granted patents are expected to expire** by 2020. However, the number of new patent publications is increasing again since 2012, underlying a **new enthusiasm for capacitive fingerprint sensors**. As the development of those sensors is linked to electronic devices market, the growing market of those devices should drive the innovation in the capacitive fingerprint sensing technologies and the number of new patent applications in the domain is expected to keep rising.

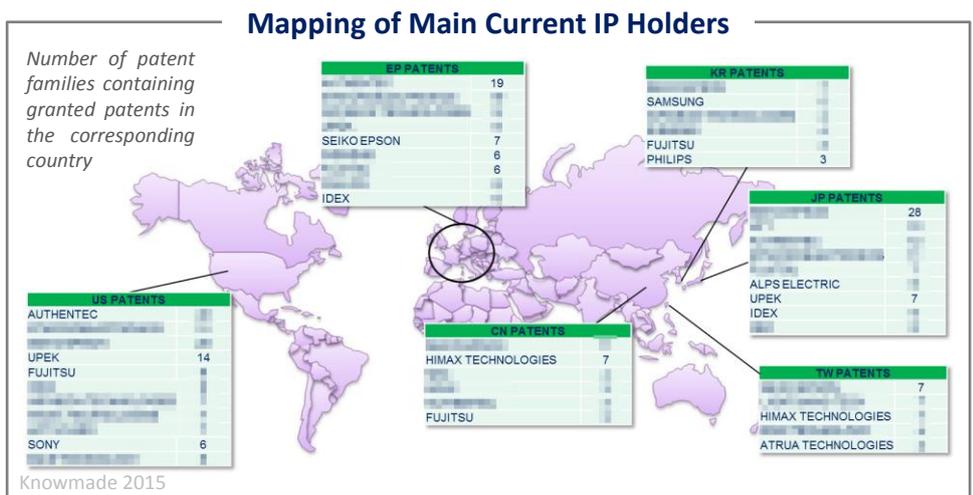
PATENTED TECHNOLOGY AND APPLICATIONS

The 650+ patent families selected for this study have been manually segmented by applications. About 80% of those families disclose a device comprising a sensor and the main applications for sensors of the capacitive type are Ic cards and electronic devices. Thus capacitive fingerprint sensors are developed to be compatible with such devices. Key features are the size and the thickness of the sensor as well as its swiftness and convenience for the user. Currently two types of sensors are developed : touch and swipe sensors.



IDENTIFY KEY PLAYERS

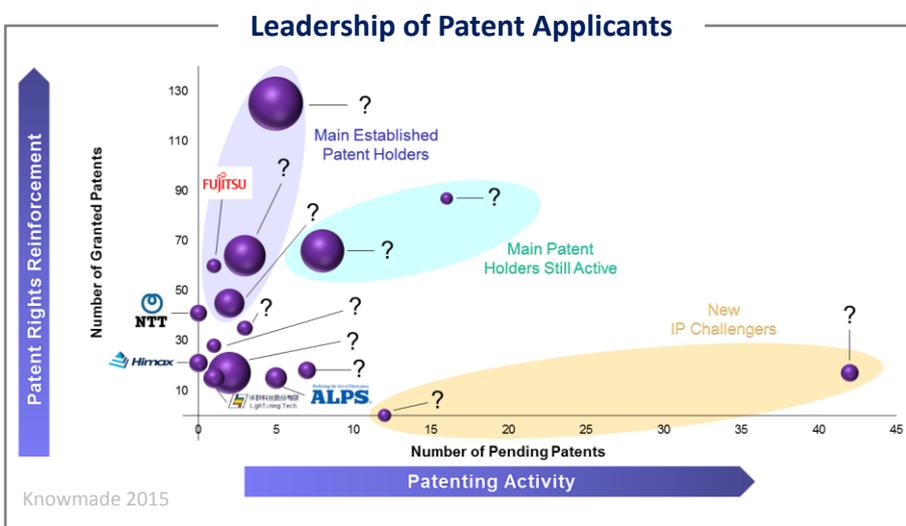
More than 15 companies are deeply involved in capacitive fingerprint sensing IP. Key players include electronics companies, semiconductor manufacturers, mobile device providers, fingerprint sensor component providers. The report provides a ranking and analysis of the relative strength of the top patent holders derived from their portfolio size, patent citations networks, countries of patents filings, current legal status of patents. Through this thorough analysis, we have identified 15+ major players, each of which is profiled in this report. Each profile includes a detailed portfolio analysis with patent activities, key patents, impact of portfolio, granted patents near expiration and IP strategies.



DISCOVER NEW IP CHALLENGERS

The business sector of capacitive fingerprint sensors has been subject to different mergers and acquisitions, reshaping the IP network. In the last couple of years, new IP challengers appeared in the field and the leadership of patent applicants should evolve in the future.

Our report also includes an **Excel database** containing all of the analyzed patents. This database allows for multi-criteria searches and includes patent publication number, hyperlinks to the original documents, priority date, title, abstract, patent assignees, technological segments and legal status for each member of the patent family.



COMPANIES CITED IN THE REPORT (NON-EXHAUSTIVE)

ALPS Electric, Apple, AuthenTec, Biometric Technology, Egis Technology, Fujitsu, Himax Technologies, Idex, Infineon Technologies, NTT, O-film Technology, Philips, Samsung, Seiko Epson, Sony, STMicroelectronics, Upek

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AUTHORS**Dr. Coralie Le Greneur**

Coralie works for Knowmade in the field of Biotechnology and Life Sciences. She holds a PhD in Molecular Biology from the University of Nice Sophia-Antipolis (France). She also holds the International Industrial Studies Diploma in Patents from the CEIPI, Strasbourg (France).

**Dr. Brice Sagot**

Brice is COO and co-founder of Knowmade. He is leading the Biotechnology and Life Sciences department. He holds a PhD in molecular biology from the University of Nice Sophia-Antipolis, France.

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