Overall, SMARTRAC topped ABI Research’s Government and Healthcare Identity Inlays vendor matrix.

SMARTRAC has a good level of market influence, echoed within its partner list, which boasts some of the leading vendors active within the government ID arena. SMARTRAC has been a pioneer of contactless inlay manufacture and is now expanding its interests into multi-application enablement. It has already delivered inlays to some of the most cutting-edge multi-application products currently in deployment, the most recent example being South Africa.

SMARTRAC’s 1H2013 shipments totaled 40 million units, resulting in a market share just below the 15% marker and first place, 2% ahead of its nearest competitor.

“SMARTRAC has been a pioneering manufacturer of contactless inlays and it is now expanding with multi-application enablement to build out its portfolio and meet the future needs and demands of the government sector.”

Phil Sealy, Senior Analyst
ABI Research

SMARTRAC was founded in 2000 and began production of inlays in Thailand in 2001. To date, SMARTRAC claims to be involved in more than 70 different eID and e-passport projects on a global basis. It has production facilities in Thailand, Malaysia, China, Germany, Finland, the United States, Mexico, and Brazil, with other entities in the Netherlands, Singapore, South Korea, India, Australia, South Africa, and the United Kingdom. For global reach and penetration, SMARTRAC received a mark of 14 out of a possible 15.

SMARTRAC serves the government ID market through the deployment of eID inlays. SMARTRAC inlays are, and have been, used within e-passports, national ID cards, drivers’ licenses, visa documents, healthcare and social security cards, and permanent resident applications, covering pure contactless, e-passport, and dual interface applications. Its dual interface PRELAM is ISO 14443 and 15693 compliant. Pure contactless card inlays are provided through SMARTRAC’s SMART-SL product family. They can be supplied in HF or UHF formats and adhere to ISO 14443, 15693, and 18000. On top of this is a dedicated product for e-passport inlays. Alongside SMARTRAC’s tailored government inlay solutions, it
also offers hard tags and ticket and label inlay coverings in LF, UHF, HF, and NFC bandwidths. SMARTRAC’s other activities outside of government ID include NFC, contactless payment, automotive, events and loyalty, public transportation, supply chain management, access control, and pharmaceutical, to name but a few. In April 2013, SMARTRAC released its SMART-HERA manufacturing concept, a dedicated machine for implanting dual interface modules onto cards. A score of 14 out of a possible 20 was achieved within the breadth of products and services offered.

SMARTRAC is associated with various initiatives and working groups. Related to the government ID market, SMARTRAC is actively involved with the NFC forum, the OSPT Alliance, APSCA, and ICMA. It has established partnerships with Gemalto, G&D, Morpho, Oberthur Technologies, INSIDE Secure, NXP, Infineon, and STMicroelectronics, all of whom compete within the government ID market at the highest level. SMARTRAC’s score of 9 out of 10 within the influence criteria reflects its strong partnerships and, thus, its market influence.

Being a pioneer within contactless and dual interface inlay production, SMARTRAC is able to provide product and interface types in keeping with multi-application functionality. In April 2014, SMARTRAC released its SMART-SL product family; an ultra-thin solution (reduced to 200 um) designed to accommodate additional physical security features. Its involvement within contactless payments and ticketing allows SMARTRAC to draw from experience to provide inlay solutions suitable for multi-application enablement and market convergence. As well as being a member of the OSPT Alliance, SMARTRAC released a new MIFARE-based PRELAM in November 2012. It also deployed more than 2 million FeliCa-based inlays.

This is reflected by SMARTRAC’s maximum score within the interface and contactless readiness criteria.

SMARTRAC’s e-passport inlays are designed to be read-only once the passport is open. Using chip activation protection (CAP) means that the e-passport cannot be read when the booklet is closed. SMARTRAC’s manufacturing facilities have been certified according to Common Criteria EAL 5+. Its products for government ID are also NASPO security assurance accredited. For standards and security, SMARTRAC was presented a score of 12.

SMARTRAC is heavily involved within the NFC market. This is a sign that SMARTRAC understands the future market playing field and, although not directly active in the enablement of NFC handsets and other CE devices, serves the market through tags. Tags will likely form a part of the ecosystem for any use of NFC within the access of e-government services, whether it be to tap a tag to guide a citizen to a website or portal, or using a tag to authenticate an identity. SMARTRAC was awarded 14 out of 20 within the multi-application and market convergence criteria.

SMARTRAC’s 1H 2013 shipments, estimated at 40 million units in the government market, resulted in a market share just under the 15% marker and first place.

SMARTRAC’s success resides primarily within the deployment of inlays used for national ID and e-passport use cases, although it is also active in the deployment of inlays into other aspects of the government ID market, counting more than 70 active government projects, currently, on a global basis. For example, SMARTRAC supplies e-passport inlays to the United States and e-passports and eID cards to Germany (Neuer Personalausweis) both of which SMARTRAC has been involved in since the respective governments launched the projects.

**Methodology**

This Vendor Matrix presents ABI Research’s ranking of the leading inlay vendors operating within the government, healthcare, and citizen ID market.

Each score section has a maximum score, with the highest score weightings being awarded to those areas deemed more important in the current market space. The bullets below outline each criterion, a description of what was evaluated, and the associated score weighting (potential maximum score) awarded for each item. Scores were awarded based on the following criteria.

**Vendor and Coverage Definitions**

ABI Research notes that there is a certain level of cross over between the different types being judged. Additionally, ABI Research is aware that a number of the large smart card vendors also operate in the development and deployment of inlays used within the government ID market. In this instance, ABI Research will only provide assessments for those smart card vendors that achieve a greater business proportion from the delivery of inlays over finished credentials.

Additionally, ABI Research purely focuses on government IDs issued by government or third-party contractors directly to citizens. At this stage, ABI Research does not consider government ID credentials used by government employees under the government, healthcare, and citizen ID definition.
Implementation

Global Penetration/Reach: Evaluates level of penetration relevant to competition and ability to deliver on a global platform. The level of capacity and distribution, location of manufacturing facilities. (Scored out of 15).

Breadth of Products and Services Offered: Evaluates the level of services offered, e.g., card ICs, reader IC manufacture, packaging/modules/inlays, memory/microcontroller. Markets in which active: national IDs, passports, voter cards, healthcare cards, drivers’ licenses, and any others. (Scored out of 15).

Influence: Evaluates the perceived level of market influence within the government ID space, membership to relevant influencing associations, standards, alliances, groups, and governing bodies. (Scored out of 10).

Production Capacity: Evaluates the ability to deliver a mass scale project in a timely and efficient fashion. Scalability, reliability, flexibility, historical projects delivered, and current business developments are all considerations within these criteria. (Scored out of 15).

Market Penetration: Evaluates a vendor’s market position relevant to competition in terms of regional penetration. Projects delivered will be taken into account, evaluating any new and existing contracts won. (Scored out of 20).

Innovation

Interface/Contactless Readiness: Evaluates the levels of contactless deployments (pure contactless and dual interface) and the current breadth of contactless product portfolios. (Scored out of 10).

Multi-application Capabilities and Support of Market Convergence: Evaluates the level of support toward the adoption of multi-applications and ability to deliver a high-end inlay fit for multi-application use. Level of e-purse capabilities, including open and/or closed loop application delivery. (Scored out of 20).

Standards and Security: Evaluates the technologies used and developed for strong ID authentication, including authentication and encryption capabilities, online and offline reader capabilities, common security criteria, and relevant standards/certifications achieved. (Scored out of 15).

Differentiation Factors: Evaluates the level of development and functional elements of inlays marketed toward the government ID market. As an extension of security criteria, this segment covers other functional dimensions designed to differentiate from competitors. This may include size, VHBR, inlay/memory size, and additional software packages. (Scored out of 15).

New Standards, Applications, and Digital Readiness: Evaluates the level of development and work toward new standards and enablement of new applications. Membership in various alliances and standard bodies, including anything around federated ID, the Fido Alliance, and use of biometrics and mobile ID. Use and integration of new applications on ID credentials and perceived readiness for digital ID. (Scored out of 20).

Rankings

After individual scores are established for Innovation and Implementation using the above criteria, an overall company score is established using the Root Mean Square (RMS) method:

\[
Score = \sqrt{\frac{\text{innovation}^2 + \text{implementation}^2}{2}}
\]

The resulting overall scores are then ranked and used for percentile comparisons.

The RMS method, in comparison with a straight summation or average of individual innovation and implementation values, rewards companies for standout performance.

For example, using this method a company with an innovation score of 9 and an implementation score of 1 would score considerably higher than a company with a score of 5 in both areas, despite the mean score being the same. ABI Research believes this is appropriate as the goal of these matrices is to highlight those companies that stand out from the others.
## Vendor Matrix Results

<table>
<thead>
<tr>
<th>Company</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMARTRAC</td>
<td>81.8</td>
<td>1</td>
</tr>
<tr>
<td>HID Global</td>
<td>81.0</td>
<td>2</td>
</tr>
<tr>
<td>ASK</td>
<td>60.0</td>
<td>3</td>
</tr>
<tr>
<td>SPS</td>
<td>55.5</td>
<td>4</td>
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</tbody>
</table>

For questions on this research, please contact ABI Research. Visit our website at [www.abiresearch.com](http://www.abiresearch.com) for contact details.

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