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Project Overview and Objectives

This is the delivery of the second year of UK Security Export Statistics. In line with this the methodology, definitions and approach to the project have remained the same as the 2016 statistics released in July 2017.

Background

The Defence and Security Organisation (DSO) which is now part of the Department for International Trade (DIT), plays a key role in assisting defence and security companies achieve export success by:

• Providing specialist export advice and practical assistance to the UK defence and security sectors – identifying opportunities for business, providing expert market analysis and intelligence, as well as event management support at defence and security exhibitions worldwide;
• Working closely with Industry, the Home Office, and the Ministry of Defence (MOD) to promote the best of British defence technology and design;
• Helping UK defence and security companies to succeed by building relationships with industry and overseas governments.

Official stats data enables the DSO to:

• Provide an official and recognised view of the UK’s security export performance to both UK industry and other government departments;
• Use data as a baseline for security market analysis;
• Target our support of companies.
Project Overview and Objectives

Project Objectives
• The purpose of the project is to provide the Defence and Security Organisation (DSO), now part of the Department for International Trade (DIT) export statistics on the UK security market.
• Frost & Sullivan has a long history of market intelligence in the security market, tracking critical national infrastructure and government expenditure and has developed a transparent and robust methodology to calculate the UK security export market.
• The project is aligned to HMG security Export Growth Strategy Capability Areas and delivers a final report of the global security market and UK export performance. As part of this Frost & Sullivan has built a bespoke interactive forecast tool to calculate the market size.
The scope of the security market will cover HMG Security Export Strategy capability areas.

<table>
<thead>
<tr>
<th>HMG SEGS</th>
<th>Definitions</th>
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<tbody>
<tr>
<td>Critical National Infrastructure</td>
<td>Mass Transport Hubs (Rail, Road, Air and Sea), Energy, Water, Oil &amp; Gas</td>
</tr>
<tr>
<td>Policing and Counter-Terrorism (CT)</td>
<td>Emergency Services, Safe City Programmes / Mayors Offices, Intelligence Services</td>
</tr>
<tr>
<td>Border Security</td>
<td>Border agencies, border control (both land and sea) (including border control systems including e-border programmes, e-visas and e-passports.)</td>
</tr>
<tr>
<td>Offender Management</td>
<td>Prison Services / Justice department contracts for specific security equipment</td>
</tr>
<tr>
<td>Major Event Security</td>
<td>Large scale events such as Olympics or Football World Cup – may be closely linked to CNI.</td>
</tr>
<tr>
<td>Services</td>
<td>Consultancy, Training, Guarding and Risk Analysis – across all segmentation above as well as commercial and industrial sites.</td>
</tr>
<tr>
<td>Cyber Security</td>
<td>Products, solutions and services across all industries from Government, CNI and Commercial</td>
</tr>
</tbody>
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**Definitions: Technology Segment Lists**

The market has been approached based on the below technology segments which align to the security industry. The lists below are not exhaustive but cover the major technologies included in scope.

<table>
<thead>
<tr>
<th>Segments</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access Control &amp; Identity Management</strong></td>
<td>Cards, Key Pads, Biometrics, Documents, Door Locks, Bolts</td>
</tr>
<tr>
<td><strong>Command &amp; Control</strong></td>
<td>Computers, Video Screens, Computer Aided Dispatch, Physical Security Information Management, Geographic Information System, Public Service Answering Points, Managed Services, Integration</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>PMR – LTE, PMR - TETRA / P25, PMR - Microwave / Fibre Optic / Satcom / WiMAX, Backhaul Network solutions, Integration</td>
</tr>
<tr>
<td><strong>Cyber Security</strong></td>
<td>Network access and Operations, Analytics and Compliance, Security Services, Internet Property Defence, Device Management</td>
</tr>
<tr>
<td><strong>Managed Service</strong></td>
<td>Manned Guarding, Total Security Solutions, Security as a Service</td>
</tr>
<tr>
<td><strong>Data &amp; Analytics</strong></td>
<td>Storage, Analytics, Big Data Solutions, Data Intelligence</td>
</tr>
<tr>
<td><strong>Risk Services</strong></td>
<td>Risk Analysis, Maritime Protection, VIP Protection</td>
</tr>
<tr>
<td><strong>Screening and Detection</strong></td>
<td>People Screening, Baggage Screening, Cargo Screening, Hand Held Screening Devices, ETD, Sensors</td>
</tr>
<tr>
<td><strong>Surveillance</strong></td>
<td>Cameras, Video Management Systems, Storage, Analytics, Networks, Sensors, Radars</td>
</tr>
<tr>
<td><strong>Vehicles</strong></td>
<td>Vehicles, Sirens / Blue Light Services</td>
</tr>
<tr>
<td><strong>Weapons</strong></td>
<td>Ammunition, Fire arms, Batons / Asps, Riot Shields / Equipment</td>
</tr>
<tr>
<td><strong>Fire Equipment</strong></td>
<td>Active Fire Protection (Fire Detection and Alarm systems, Fire Extinguishers, Sprinklers and Water Mist), Passive Fire Protection(structural fire protection, fire stopping, fire doors) Fire &amp; Rescue (Fire appliances, Pipes and hoses, Uniforms, Breathing apparatus)</td>
</tr>
</tbody>
</table>
Complexities of the security market

There are a number of considerations that need to be taken into account when approaching the UK security export market:

- The complex nature of the security market makes forecasting a complicated process. Security companies are secretive by nature, and governments and critical infrastructure operators are reluctant to release security budgets, contract awards and operational information.
- Visibility on deals and contract awards are often confidential or classified and not in the public domain.
- Availability of company data can be limited, especially the percentage of the revenues that are derived from security (especially within large Defence & Security Providers, ICT organisations or services companies.)
- The blur between security and defence contracts, especially when militaries are responsible for security operations such as borders or internal counter terrorism.
- Complicated nature of what constitutes a security export.
**Definition of ‘Export’**

This remained the same as the 2016 release to ensure consistency in the data

**Export Definition:**

For the purpose of this project Frost & Sullivan will define an export under the following:

- Any sale of security technology or services from a UK registered organisation - Any sale to defence organisations, MoD, DoD is not included as this has been classified as a ‘Defence Export’.
- To be included the sale must be accounted to the UK office - If a UK company makes a sale from an office registered in another country and reports the revenues within that country, this will not be counted as a UK export as the revenues have not been attributed to the UK.
- ‘New orders’ covers both legally binding contracts and routine or small orders (e.g. spares) - which though not legally binding are regarded as firm.
- Revenues for multi year contracts will be assigned equally through the life of the project - For example, a 5 year contract for equipment and support will be spread over those years.
- Additions to existing orders - These are identified as new contracts.
- Joint ventures - Only the UK value-added part of the venture is counted.
Approach and Methodology

Due to the challenges of the security market as outlined above, not all required data is in the public domain and open source. To calculate the market size of the UK exports Frost & Sullivan has made assumptions at a segment, country and company level. For this process there will be three categories of data:

1. **Known Known Data** – Base data sourced from company information and contracts.
2. **Known Unknown Data** – Modelled data for confidential / restricted contracts
3. **Unknown Unknown Data** – Hidden expenditure that is not in the public domain, or part of other budgets that are not included in traditional security scope.

To calculate the UK security export market size Frost & Sullivan developed a forecast model to capture all known and unknown data based on the following methodology.

**Model Flow**

Base Data ➔ Analysis & Assumptions ➔ Calculation ➔ Dynamic Output
Model Development – Stage 1

Stage 1: Base Data (Known Known Data)

One of the key requirements of the project was to provide greater visibility on company performance, but also on specific contracts. To achieve this Frost & Sullivan approached the task of sizing the UK Security export market by collecting three streams of data and information:

1. **Contract Data** – collation of all contracts in the public domain across the 7 SEGS areas including start and end dates and values where published.
2. **Reported Company Information** - List of all relevant company data including revenues, export revenues and regional presence.
3. **Primary Research** – Frost & Sullivan targeted the largest identified UK security companies that are represented across the SEGS and approached them to interview and capture their export performance to validate the research findings.

These three streams of data give a bottom up account of the performance of UK security companies and specific export contracts that have been announced. All data was tagged by Technology Segment, DSO Category and Region.
Model Development – Stage 2

Stage 2: Analysis and Assumptions - Developing the market size

Uncaptured Market (Known Unknown Data)
Once all base data had been collected and verified, an analysis was conducted to assess how much of the export market had been captured and was known.

To achieve this an analysis of the largest companies in each of the technology segments was conducted. An assessment of the reported export data by the companies was considered and a % of uncaptured market was derived. For markets that have a fragmented competitive environment (e.g. surveillance) the uncaptured % was naturally larger as fewer companies reported results. This was taken into consideration during the analysis phase.

Example of Screening and Detection Segment
An assessment of the key suppliers of screening and detection companies was completed including published and reported data. A confidence level on how many of the companies in the segment had reported this and how much of the export market this captured was calculated and added to the known data to give a total export figure for screening and detection in 2016. The justifications for this have been supplied to DSO.

This produced the UK Security Export Market for 2016 for each of the technology segments. Added together this calculated the total UK Security Export Market.
Model Development – Stage 3

Splitting the UK Security Export Market into SEGS categories and regions

The next stage of the modelling process was to split the technology segments by DSO Security Export Growth Strategy Capability areas. This was done through an assessment of each of the different technology segments export value as well as available contract information that would indicate an end user community that would align to SEGS categories – e.g. police forces / CNI installation / Border Security Organisation. Assumptions were made to split the technology segments by SEGS capability areas.

A regional analysis was done using the information captured from the known data derived from the base data where companies had reported regional splits. This accounted for around 50% of the security market, and this regional split was applied to the total Export Market figure for 2016 and 2017.

The output of this was to give 2017 numbers by SEGS Categories and by region.
Model Development – Stage 4

Growth Forecast for 2017 – 2021

The growth for each of categories was forecasted using specific parameters for each DSO SEGS capability area. Each had 3 parameters selected that will affect the potential growth of UK security exports over the next five years. This included:

1. Threat perception
2. Technological development
3. Regulations
4. Competitive environment
5. Government to government relations
6. Previous success for UK companies

An analysis for each of the SEGS categories was done at a regional level to accurately reflect the dynamics in each of these different markets. This gave a tailored growth forecast 2017 – 2021 for all the SEGS capabilities to ensure growth reflected the market conditions.

The final stage was to validate the final UK export output, taking into account previous company performance, contract awards and expected performance moving forward. In addition the regional markets were considered using Frost & Sullivan security expertise, to ensure that opportunities and security expenditure were justifiable and realistic in these markets over the next five years.

Quality Assurance Process

Throughout the project there was continual feedback loops with the project manager and subject matter experts running sanity checks on the data. At multiple times throughout the project a team of Senior Consultants in the Aerospace, Defence and Security Team at Frost & Sullivan that were not directly involved in the research or analysis was brought in to give a fresh perspective, challenge the data and provide feedback. The final report was validated and approved by the head of the business unit.
Global Security Exports Methodology

Frost & Sullivan was tasked to conduct an assessment of the global security export by country. This was to help understand where the UK ranked against other countries. To achieve this Frost & Sullivan followed a similar approach to the methodology, however used separate data sets and analysis as outlined below.

Base Data ➔ Analysis & Assumptions ➔ Calculation ➔ Output

**Step 1: Base Data** – Frost & Sullivan gathered base data of reported exports from the World bank. The source for this can be found at: [https://data.worldbank.org/](https://data.worldbank.org/). This data at a country level included:

- Exports of goods and services (Current USD)
- High Technology Exports (Current USD)
- Arms Exports (SIPRI)

**Step 2: Analysis & Assumption**
Using the UK Security Export figures as a benchmark, the % of security exports of the total goods and services exports were calculated. The high technology exports and Defence exports were used as an indicator to identify the countries with greater security exporters. This developed a list of the top 30 security exporters and was validated against internal Frost & Sullivan tracking of security markets.

An analysis was then conducted on each country’s security industrial base, considering the companies in each of the technology segments including: Access Control & Identity Management, Command & Control, Communications, Cyber Security, Managed Service, Data & Analytics, Risk Services, Screening and Detection, Surveillance, Vehicles, Weapons, Fire Equipment. These were ranked against the UK security industry and if they had a stronger industrial base would gain a positive score. If they had a weaker industrial base this would gain a negative score.

Once all technology segments had been assessed an overall score was calculated. For each country. The country score was then used to benchmark against the UK and the estimated % of the total goods and services exports that could be attributed to security.

**Step 3: Calculation & Output**
The calculated % was applied to the total exports of goods and services by each country to give the security export by country. This was then verified and sense checked though assessing major competitors and the local industrial base. This competitive assessment has been supplied to DSO to support the assumptions and analysis made.
Quality Assurance

Quality Assurance Process

Throughout the project there was continual feedback loops with the project manager and subject matter experts running sanity checks on the data. At multiple times throughout the project a team of Senior Consultants in the Aerospace, Defence and Security Team at Frost & Sullivan that were not directly involved in the research or analysis was brought in to give a fresh perspective, challenge the data and provide feedback. The final report was validated and approved by the head of the business unit.
Annex 1: Survey Return Information

Survey response Information - Key Dates for Survey Returns:

- A list of 330 UK companies was compiled from secondary research and as part of the dataset built for the security export model.
- Initial email sent to companies identified through Frost & Sullivan analysis as security market leaders between 15\textsuperscript{th} February and 22\textsuperscript{nd} March 2018. This was sent to a total of 159 companies.
- 2 rounds of follow up emails sent to all organisations between the 4\textsuperscript{th} April and the 5\textsuperscript{th} May (sent between 4-7 days after previous message if no response was received).
- An extra message was also sent to selected organisations after the 1\textsuperscript{st} May to try and encourage further participation.

Results and responses were similar to previous years, and as expected relatively low due to the sensitive nature of the market, and difficulty to segment security out of a larger revenue that includes no security related goods and services for some major companies.

In total, survey return documents were sent to a total of 159 companies, with responses received from 28 companies (17\% of firms contacted) that provided information on their export statistics.