<table>
<thead>
<tr>
<th>Lead (org.)</th>
<th>Co-implementer</th>
<th>Source of financing</th>
<th>Budget 2016</th>
<th>Budget 2017</th>
<th>Budget 2018</th>
<th>Budget 2019</th>
<th>Budget 2020</th>
<th>Total 2016-2019</th>
<th>Comments</th>
<th>Links to development plans in other fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAC</td>
<td>Enterprise Estonia (EE), ministries and ministerial agencies, RD institutions</td>
<td>MEAC/EE</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 1. Public sector – development of public sector services based on space applications

**Detailed description/explanation of action**

1) Raising awareness at three levels:
   a) Parliamentary level: increasing the competence of the Space Studies Support Group of the Riikikogu on space issues. We will also consider the option of organizing the 2017 EISC-European Interparliamentary Space Conference in Estonia.
   b) The level of top-executives and decision-makers: raising awareness of applications of space technologies in decision making, in procurements of services based on space technologies, in training the government as a smart contracting entity in the framework of the innovative public procurements programme.
   c) Expert level: raising awareness and improving skills for using Earth observation data alongside other data sources, in the use of Copernicus core services, etc.

2) Considering the possibility of organizing a conference to present the experiences of Estonia as a new member state of the ESA during the Estonian Presidency in 2018.
3) Training the government as a smart contracting entity in the framework of the enterprise awareness and innovative public procurement programmes.
4) Supporting the administration of the Estonian Space Office website.

**Number of functional new services, based on Earth observation data, in the public sector:**

1 1 1 2 4

### 1.1. Raising the awareness among public sector employees regarding the opportunities and applications of space technologies in their government area

1) Identifying opportunities for creating fast and convenient domestic access to the data of the Copernicus Sentinel programme.
2) Supporting the efforts of the private sector to enter the market of Copernicus services.
3) Facilitating wider utilisation of the Copernicus core services and Copernicus Sentinel data, as well as the results based on this data, in the public sector.
4) Contributing to the launch of 4-5 pilot projects based (partially or fully) on Earth observation data in the public sector.
5) Establishing an Earth Observation Council for targeted coordination of the Earth-observation field and mediating the interests of service users and providers.
6) Looking for opportunities to implement the ideas arising from the Galileo programme and to utilise Galileo services within the country.
7) Active participation in the discussions of the ESA and the European Commission on creating a common European data distribution platform.

**Potential sources of financing:**

- Potential sources of financing: the budgets of ministries and ministerial agencies, the measure "Conditions and procedure of allocating support for development of public service offering" of the Information System Authority of the MEAC, the measure "Supporting strategic research infrastructure based on the roadmap of the MER, the environmental protection projects support measure of the Environmental Investment Centre, etc.

### 1.2. Facilitating domestic utilisation of the opportunities offered by the Copernicus and Galileo programmes of the EU

**Detailed description/explanation of action**

1) Identifying opportunities for creating fast and convenient domestic access to the data of the Copernicus Sentinel programme.
2) Supporting the efforts of the private sector to enter the market of Copernicus services.
3) Facilitating wider utilisation of the Copernicus core services and Copernicus Sentinel data, as well as the results based on this data, in the public sector.
4) Contributing to the launch of 4-5 pilot projects based (partially or fully) on Earth observation data in the public sector.
5) Establishing an Earth Observation Council for targeted coordination of the Earth-observation field and mediating the interests of service users and providers.
6) Looking for opportunities to implement the ideas arising from the Galileo programme and to utilise Galileo services within the country.
7) Active participation in the discussions of the ESA and the European Commission on creating a common European data distribution platform.

**Number of functional new services, based on Earth observation data, in the public sector:**

1 1 1 2 4

### 1.3. Identifying opportunities for developing Copernicus added-value services in the region

**Detailed description/explanation of action**

1) Identifying opportunities for increasing the efficiency of resource utilisation and creation of joint development projects.
2) Organising an Estonian-Latvian-Lithuanian roundtable on implementation of the Copernicus programme in the region.
3) Organising meetings with relevant Finnish and Swedish institutions to exchange shared interests.

**Number of functional new services, based on Earth observation data, in the public sector:**

1 1 1 2 4

### 1.4. Facilitating innovative public procurements to commission innovative applications based on space technologies in the public sector

**Detailed description/explanation of action**

1) Facilitating organisation of innovative public procurements based on space technologies in the public sector.
2) Facilitating close cooperation of the public sector with researchers and entrepreneurs for commissioning new, innovative applications.
3) Active commitment to raising the awareness of persons organising smart procurements (Buyers group).

**Number of functional new services, based on Earth observation data, in the public sector:**

1 1 1 2 4

**Potential sources of financing:**

- Potential sources of financing: the budgets of ministries and ministerial agencies, the measure 'Conditions and procedure of allocating support for development of public service offering' of the Information System Authority of the MEAC, the measure 'Supporting strategic research infrastructure based on the roadmap of the MER, the environmental protection projects support measure of the Environmental Investment Centre, etc.

- Actions can be financed from the budgets of ministries, the funds of the Interreg programme or Horizon.
### 1.5. Participating in the development of European space policy, in the work of European governing bodies for space affairs at a high official level and in the work of field-specific international organisations.

<table>
<thead>
<tr>
<th>Action</th>
<th>Organisation(s)</th>
<th>Responsible Institution(s)</th>
<th>Expected Outcome</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Representing Estonia’s interests in the space affairs working groups and committees of the European Commission.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Active participation in the work of the Council and committees of the European Space Agency.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Active participation in the work of field-specific international organisations, incl. GOES (Global Geostationary Earth Observations System) and IAF (International Astronautical Federation).</td>
<td>MEAC</td>
<td>EE, research and development institutions, relevant ministries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Organising a 10-module training cycle for members of the Estonian delegation to the committees and the Council of the ESA to raise the awareness of the functioning of the ESA system, thereby increasing the capacity of the members to make an effective contribution to the work of the committees.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Preparing for Estonian Presidency in chairing the European Commission working group on space policy.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Actions will be financed by ministries and under measure 520.

### 1.6. Raising the awareness and interest of entrepreneurs regarding the developments and opportunities in the space industry.

<table>
<thead>
<tr>
<th>Action</th>
<th>Organisation(s)</th>
<th>Responsible Institution(s)</th>
<th>Expected Outcome</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Presenting the opportunities offered by the ESA to key clients through the enterprise development programme of the EE and offering support for increasing the competences, which are required for submission of tenders.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Strengthening cooperation with professional associations to ensure that they are informed and have the technical competence for involvement in the field of space technologies.</td>
<td>MEAC</td>
<td>EE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Actions can be funded from the EE programmes for enterprise development or for development of entrepreneurial awareness.

### 1.7. Facilitating utilisation of applications based on space technologies in the economy on the ground.

<table>
<thead>
<tr>
<th>Action</th>
<th>Organisation(s)</th>
<th>Responsible Institution(s)</th>
<th>Expected Outcome</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Investigating the functioning of the ESA Business Incubator Centre (BIC) and the potential for launching it in Estonia.</td>
<td>MEAC</td>
<td>EE, all ministries</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Actions can be funded, in addition to the budgets of ministries, from the ESA Industry Incentive Scheme (IIS) or the innovative public procurement programme.
2.6. Raising the awareness and motivation of enterprises and research institutions regarding participation in international programmes (Horizon 2020, Copernicus, Galileo and other initiatives of the European Commission).

1) Organising consultations, information days and other communication regarding various international networks and programmes.
2) Raising the awareness of entrepreneurs regarding suitable international programmes through the enterprise development programme of the EE.
3) MEAC and other relevant ministries

2.7. Facilitating cooperation between enterprises, research institutions and public sector bodies in developing, utilisation and export of solutions based on space technologies.

1) Facilitating cross-border contacts (visits of entrepreneurs and RD institutions to potential cooperation partners, roundtable meetings between countries, etc).
2) Facilitating implementation of pilot projects based on Earth observation in the public sector.
3) Planning of several matchmaking events in the context of Estonian Presidency in 2018 (in the framework of the Space
   Relevance of ministries

3. Education and research – performance of scientific research in the fields of space technologies and applications, and provision of educational support

<table>
<thead>
<tr>
<th>Indicator / outcome</th>
<th>Number of Estonians receiving training at the ESA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 2 2 2 2 2 2 2</td>
</tr>
</tbody>
</table>

3.1. Implementation of actions to promote space research and technologies, motivating students to focus on science, engineering and technology specialties, helping to understand the application potential of key technologies in the space industry and to strengthen cooperation between RD institutions and enterprises.

Facilitating organisation of events, competitions, exhibitions, etc to present the industry and/or to test one’s skills in the field. Facilitating construction of student satellites, participation in the space industry business plan competitions, hackathons and other events of the ESA and the EE.

MER universities, RD institutions, professional associations, enterprises in the industry

A potential source of financing is the MER “TeaMe” programme for the promotion of research.

3.2. Supporting participation of research and development institutions in the provision of research competence in the field of space technologies.

1) Facilitating participation of Estonian RD institutions in the tendering procedures of the mandatory and optional programmes of the ESA.
2) Notifying target groups of measures based on free competitions and of optional subject areas.

MEAC EE

The budget of the ESA mandatory and optional programmes (see items 2.2. and 2.3.), ERC funds.

3.3. Participating in international cooperation programmes and networks for research and development of space applications and technologies.

Facilitating participation of research and development institutions in international cooperation programmes and networks (Horizon 2020 and other initiatives of the European Commission, etc).

MEAC EE

Potential sources of financing include Horizon 2020, Eurostars, initiatives of the European Commission.

3.4. Support for awareness-raising in ministries and ministerial agencies regarding potential utilisation of space applications in their government area through provision of training to research coordinators.

Raising the awareness of research coordinators regarding the potential of space technologies and applications in their government area.

MEAC MEAC and other relevant ministries

The entrepreneurial awareness programme of the EE.

3.5. Offering practical training opportunities for Estonians at various centres of the ESA (ERSRIN, ESTEC, etc).

Creating practical training opportunities for doctoral students at various development centres of the ESA.

MER Estonian universities

Potential sources of financing include the doctoral studies programme of the MER and the Mobilitas programme.

*Spin-off multiplier means the ratio of industrial effects arising from the public contracts of the European Space Agency with private sector enterprises to the total value of contracts during a particular period. I. Industrial effects include all benefits arising from technology, know-how, enterprise image and business contacts, which are obtained through contractual relationships with the European Space Agency and result in increased sales and/or added value when applied to other activities of an enterprise.

**The amount of 870,000 is subject to adjustment with Estonia’s mean GDP of the last three years.

**1,600,000 is the envisaged amount to be requested from the state budget.