

Industrial opportunities for the modernization of the Guyana Space Centre

The French Guyana Space Centre will go through a major modernization effort in the coming years.

The European Space Agency (ESA) intends to publish a set of Invitations to Tender (ITTs) in the Fall 2020, as a first step to this progressive modernisation of the Launch Range. All Greek companies are invited to tender.

These activities cover a wide range of domains:

- New missions operations centre
Incl. Construction of the Centre (Earth works, building construction, carpentry, road network, etc.) and Development of the Data centers platform, networks, software, etc.
- Energy management
Incl. Renewal of the power supply station and generators and Deployment of solar power fields
- Air conditioning systems renewal
- Civil engineering and infrastructure
Incl. Renewal of the drinkable water network, road network, etc.

These intended ITTs can already be consulted on EMITS at : emits.sso.esa.int

To get access to the ITTs, you are invited first to register your organisation in the esa-star system: <https://esastar-emr.sso.esa.int>. This will allow your organisation to access all services and features offered by EMITS.

Once registered, you can log in on EMITS at emits.sso.esa.int.

To view the intended ITTs, please click on “Entities” and then “Centre Spatial Guyanais”.

The current list of intended ITTs can be found below.

[20.CSGK.012](#) Mission Operations Centre construction - Earth work to prepare the ground (INTENDED)

[20.CSGK.019](#) Procurement of Optical Fibers for the digital network at CSG (INTENDED)

[20.CSGK.026](#) SNT project (so-called “Socle Numérique Transverse”) (INTENDED)

[20.CSGK.028](#) Refurbishment of partial areas of the "Route de l'espace" (INTENDED)

[20.CSGK.030](#) Renewal of the 1D50 Main Power Supply station (INTENDED)

[20.CSGK.032](#) Deployment of 5MWc Solar power field (INTENDED)

[20.CSGK.034](#) Renewal of the air cooling system at Payload processing facility EPCU S5 (INTENDED)

[20.CSGK.035](#) Enhancement of the Spaceport 20kV network (INTENDED)

[20.CSGK.036](#) Power supply engines alternative (INTENDED)

- [20.CSGK.037](#) Refurbishment of the hot and chilled water supply network at the Technical Centre (INTENDED)
- [20.CSGK.038](#) Renewal of the drinkable water network (INTENDED)
- [20.CSGK.039](#) Procurement of air cooling equipment for the renewal at Payload processing facility EPCU S5 (INTENDED)
- [20.CSGK.040](#) Mission Operations Centre construction -Carpentry batch (INTENDED)
- [20.CSGK.041](#) Mission Operations Centre construction -structural frame and building activities (INTENDED)
- [20.CSGK.042](#) Mission Operations Centre construction - roads and miscellaneous networks batch (INTENDED)
- [20.CSGK.043](#) Mission Operations Centre construction - Low current and security batch (INTENDED)
- [20.CSGK.044](#) Evolution of digital network infrastructure at CSG (INTENDED)
- [20.CSGK.045](#) Missions Operations Centre - Data centers platform (INTENDED)
- [20.CSGK.046](#) Missions Operations Centre - meteorological system (INTENDED)
- [20.CSGK.047](#) Missions Operations Centre - network (INTENDED)
- [20.CSGK.048](#) Missions Operations Centre - remote management capacity on existing systems (INTENDED)
- [20.CSGK.049](#) Operational Software evolution (CDO-BLA project) (INTENDED)
- [20.CSGK.050](#) Missions Operations Centre construction - Energy activities batch (INTENDED)
- [20.CSGK.051](#) Missions Operations Centre construction - HVAC activities batch (INTENDED)

CORE LAUNCH RANGE RENEWAL

Title: Missions Operations Centre construction - Earth work activities batch

IITT # 20.CSGK.012

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre. In this frame, the purpose of this activity is to perform the earth work activities required to undertake the construction of the building.

Required Skills:	Earth Work
Estimated Budget:	< 1 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - Structural frame and building activities

IITT # 20.CSGK.041

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre designed as a building of 4 levels + Ground floor with a surface of around 1000 square meters each, and 2 structural parts with a surface of around 1000 square meters each. The purpose of this activity is to perform the structural frame activities and building construction.

Required Skills:	Building works
Estimated Budget:	< 6 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - Carpentry batch

IITT # 20.CSGK.040

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre designed as a building of 4 levels + Ground floor with a surface of around 1000 square meters each, and 2 structural parts with a surface of around 1000 square meters each. The purpose of this activity is to perform the first and second fix carpentry activities.

Required Skills:	Woodwork and steel structures
Estimated Budget:	< 7 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - Energy activities batch**IITT # 20.CSGK.050**

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre. In this frame, the purpose of this activity is to perform the implementation of the electrical systems and associated networks disseminated in the building, in compliance with the requirements of the users systems of the Mission Operations Centre and state-of-the-art technology.

Required Skills:	Electrical power distribution
Estimated Budget:	< 2 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - HVAC activities batch**IITT # 20.CSGK.051**

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre. In this frame, the purpose of this activity is to perform the implementation of the HVAC systems and associated networks disseminated in the building, in compliance with the requirements of the users systems of the Mission Operations Centre and state-of-the-art regulation and control functionalities.

Required Skills:	Air-conditioning, chilled water production and distribution, control and regulation of air-conditioning systems
Estimated Budget:	< 6 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - Low current and security batch**IITT # 20.CSGK.043**

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre. In this frame, the purpose of this activity is to perform the implementation of the low current and security systems and networks disseminated in the building.

Required Skills:	Cabling, systems Low current and security networks and systems
Estimated Budget:	< 2 M€
Estimated date of the Tender:	period 2020-2024

Title: Missions Operations Centre construction - Roads and miscellaneous networks batch

IITT # 20.CSGK.042

The Core Launch Range Renewal development aiming at CSG enhanced capabilities foresees the development of a new Mission Operations Centre. In this frame, the purpose of this activity is to perform the implementation of the road to access to the building as well as miscellaneous external networks.

Required Skills:

Estimated Budget: < 2 M€

Estimated date of the Tender: period 2020-2024

Title: Missions Operations Centre Data centers platform

IITT # 20.CSGK.045

At the European Spaceport, the new Missions Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, in particular by fostering the remote operability as well as new enhanced management capabilities. This activity pertains to the implementation of these capabilities through the development of 2 Data Centers (a primary and a secondary, in a reduced size with respect to the nominal one, designed in 2 independent and dedicated areas) housing and encompassing more than 40 cabinets to be deployed and interconnected in there as well as all the digital automation equipment of the several operational systems of the Launch Range.

Required Skills:

informatics
networks
automation
computing algorithms
software
real-time IT systems
network development
man-machine interface (MMI)

Estimated Budget: < 4 M€

Estimated date of the Tender: period 2020-2024

Title: Missions Operations Centre networks

IITT # 20.CSGK.047

At the European Spaceport, the new Missions Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, in particular by fostering the remote operability as well as new enhanced management capabilities. The several operational systems and IT activities will lay on LAN networks such as the core and nodal operational network (e.g. ACDC), the operator station access network (e.g. R.A.P.), operational Launch Range network (e.g. R.O.C.K.) and operational far remote links network (e.g. R.O.L.L.) including also the Administration and Management Network (e.g. R.E.M.).

The purpose of this activity is to carry out the design of these secured LAN networks, which involves hardware interfaces such as network equipment (e.g. router and switch) and other physical layer equipment.

Required Skills:

Ethernet or IP or MPLS networks
Routing, Firewall and multiplexing
Supervision
automation
software
real-time IT systems
network development
man-machine interface (MMI)

Estimated Budget:

< 6 M€

Estimated date of the Tender:

period 2020-2024

Title: Operational Software evolution (CDO-BLA project)

IITT # 20.CSGK.049

In the frame of the Core Launch Range Renewal development aiming at enhanced capabilities, the measure system of the Launch Range encompasses systems that compute the Telemetry data delivered by antennas, the localisation data provided by the radars, the Telecommand system.

The Localisation software, after calculating the launcher position and its speed, communicates in real time the information to several operational system users.

The Telemetry system processes the CVI extraction data coming from the downrange stations and provides with the onboard launcher information to several operational systems, in particular to the localisation.

The mission analysis system performs, at least twice during a launch campaign preparation, the customisation of the specific configuration of the sensors implemented during the launch.

The purpose of this activity is to carry out the evolution / adaptation of all these above measure system operational software as well as the mission analysis software and the in-flight safety submission software.

It foresees also the implementation of upgraded features fostering the operational flexibility with the possibility to set the configuration depending on the performed activity (maintenance, launch day, training...) or the operational system implemented.

Required Skills:	informatics networks automation computing algorithms software real-time IT systems network development man-machine interface (MMI)
Estimated Budget:	< 14 M€
Estimated date of the Tender:	period 2020-2024

Title: SNT project (so-called "Socle Numérique Transverse")

EMITS IITT: 20.CSGK.026

At the European Spaceport, the new Missions Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, in particular by fostering the remote operability as well as new enhanced management capabilities.

The SNT project (so-called "Socle Numérique Transverse" project) implements a modernisation of the launch range software assets with a view to enhancing flexibility, openness and configurability, gathering the following several components:

- Scheduling: a unique software design to plan the activities, estimate the resources, analyse the co-activity, follow-up the projects, deliver the authorization to proceed for planned activities, as a synthesis to schedule the activities of the launch range (the number of activities being managed is approximately 1000 per month);
- Data exchange collaborative platform: designed to allow secured data exchange internally and externally of CSG (the number of users being interfaced is higher than 500);
- Management of the technical configuration: in order to know at any time, the set-up and analyse the configuration of the launch range (the corresponding systems would be energy, air conditioning, telecommunications);
- Computer-Aided Maintenance Management tool (CAMM): to manage maintenance, in terms of scheduling, data updates and reporting implementation;

and whenever possible IA applications for business intelligence.

Required Skills:	GROUND SEGMENT Scheduling Configuration Managing Collaborative Data Exchanges Maintenance
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

<u>Title: Missions Operations Centre remote management capacity on existing systems</u> <u>IITT # 20.CSGK.048</u>	
<p>At the European Spaceport, the new Missions Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, in particular by fostering the remote operability as well as new enhanced management capabilities. This Missions Operations Centre will be interfaced with several equipments of the Launch Range systems such as for the Telemetry operating 2 on-site antennas, and for the Localisation operating a maximum of 4 radars...</p> <p>This activity pertains to the implementation of these remote management capabilities carrying out the development of an high level software layout and system interfacing the existing Launch Range equipment or anyway the enhancement of the latter.</p>	
Required Skills:	informatics networks automation computing algorithms software real-time IT systems network development man-machine interface (MMI)
Estimated Budget:	< 3 M€
Estimated date of the Tender:	period 2020-2024

Title: Meteorological system at Missions Operations Centre

IITT # 20.CSGK.046

At the European Spaceport, the new Missions Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, in particular by fostering the remote operability as well as new enhanced management capabilities.

This will host the meteorological station whom fonctionnalities encompasse approximately 10 independant operational systems to deal with lightning or rain forecasts, winds analysis, ...

The new area at the Missions Operations Centre dedicated to the meteorological forecast system will be designed to welcome these systems, in the new CDO Plateform environment.

Required Skills:

Informatics and networks
automation
computing algorithms
software meteorological systems

Estimated Budget:

< 500 k€

Estimated date of the Tender:

period 2020-2024

Titre: Evolution of digital network infrastructure at CSG

IITT # 20.CSGK.044

At the European Spaceport, the new Mission Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, and in particular by fostering the remote operability.

Consequently, the wide-scale MAN digital network need to be increased by spread connections and bandwidth capacity to allow the remote management and the monitoring of several operating systems.

The purpose of this activity is to carry out the implementation of new underground cable ducts (estimated of about 5 km) as well as the installation of supplied optical fibers.

Required Skills:

installation of Optical Fiber networks

Estimated Budget:

< 4 M€

Estimated date of the Tender:

period 2020-2024

Title: Procurement of Optical Fibers for the digital network at CSG

IITT # 20.CSGK.019

At the European Spaceport, the new Mission Operations Centre aims at enhanced capabilities of the Launch Range for centralized supervision of operations, and in particular by fostering the remote operability.
Consequently, the wide-scale MAN digital network need to be increased by spread connections and bandwidth capacity to allow the remote management and the monitoring of several operating systems.
The purpose of this activity is the procurement of optical fibers to be installed in the underground cable ducts (estimated of about 5 km).

Required Skills:	Optical Fiber production
Estimated Budget:	< 2 M€
Estimated date of the Tender:	period 2020-2024

Title: Refurbishment of the hot and chilled water supply network at the Technical Centre

EMITS IITT: 20.CSGK.037

At the Technical Centre, the hot and chilled water network is spread among respectively 2.5 km and 4 km and is supplying more than 20 buildings all around the CSG.
Additionally, the new Mission Operations Centre requires to be supplied by dedicated interfaces.
The purpose of this activity is the refurbishment of this ageing air conditioning water supply network as well as the enhancement of its design towards state-of-the-art technologies in order to better ensure its future availability, reliability and maintainability for operational needs

Required Skills:	GROUND SEGMENT / OPERATION & CONTROL FACILITIES Air-conditioning, chilled water production and distribution
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Titre: Renewal of the air cooling system at Payload processing facility EPCU S5

IITT # 20.CSGK.034

The air conditioning system for the Payload processing facility EPCU S5 (including the 3 1MW cooler units, the 45 air-handling units, the fan coil units as well as the centralised control and regulation system) has become obsolete.

The purpose of this activity is to renew the abovementioned ageing system with state-of-the-art technology in order to better ensure its future availability, reliability and maintainability for operational needs as well as to study the possibility to include new active carbon filtering systems necessary to guarantee the level of property of the clean rooms in particular for some specific missions as scientific ones.

Required Skills:

Air-conditioning,
chilled water production and distribution,
control and regulation of air-conditioning systems,

Estimated Budget:

< 3 M€

Estimated date of the Tender:

period 2020-2024

Titre: Procurement of air cooling equipment for the renewal at Payload processing facility EPCU S5

IITT # 20.CSGK.039

The air conditioning system for the Payload processing facility EPCU S5 (including the 3 1MW cooler units, the 45 air-handling units, the fan coil units as well as the centralised control and regulation system) has become obsolete.

The purpose of this activity is the procurement of several equipment to be renewed:

- 3 1MW cooler units,
- 45 air-handling units,
- fan coil units,
- the centralised control and regulation system

Required Skills:

Air-conditioning,
chilled water production and distribution,
control and regulation of air-conditioning systems,

Estimated Budget:

< 7 M€

Estimated date of the Tender:

period 2020-2024

Titre: Renewal of the 1D50 Main Power Supply station	
EMITS IITT: 20.CSGK.030	
The purpose of this activity is the renewal of the ageing HV (90kV) to MV (20kV) transformer station 1D50 as well as the segregation of the EDF and CNES perimeters of this station and the enhancement of the design towards state-of-the-art technologies in order to better ensure its future availability, reliability and maintainability for operational needs.	
Required Skills:	GROUND SUPPORT EQUIPMENT / ELECTRICAL GROUND SUPPORT EQUIPMENT High voltage electrical power distribution, Cells
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Title: Enhancement of the Spaceport 20kV network	
EMITS IITT: 20.CSGK.035	
The purpose of this activity is to consolidate the energy autonomy at CSG by state-of-the-art electrical network management associated to the indigenous production plant within the CSG. The refurbishment and improvement of the MV (20kV) power distribution networks as well as the enhancement of the design towards state-of-the-art technologies leading to a Smart Grid approach, in order to better ensure its future availability, reliability and maintainability for operational needs.	
Required Skills:	GROUND SUPPORT EQUIPMENT / ELECTRICAL GROUND SUPPORT EQUIPMENT High voltage electrical power distribution,
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Title: Power supply engines alternative	
EMITS IITT: 20.CSGK.036	
At the European Spaceport, in order to consolidate the energy autonomy during critical phases of a launch campaign by indigenous production units of electrical power, and not relying only on diesel generators used only during launch, but rather by investing in strategic low cost production capability, the activity consist in the renewal of several sets of ageing 1500-kVA power supply generators required during launch mode (rehearsal and countdown phases) with gradual introduction of Lithium-Ion Battery based or Hydrogen Fuel Cell based power systems.	
Required Skills:	Electrical power generation Lithium-Ion Battery based system Hydrogen Fuel Cell based system
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Title: Deployment of 5MWc Solar power field	
EMITS IITT: 20.CSGK.032	
In order to consolidating the energy autonomy at CSG by low cost and high return of investment renewal energy production, a first approximatively 5MWc Solar Power Plant has to be built and operational in the period 2020-2022.	
Required Skills:	GROUND SUPPORT EQUIPMENT / ELECTRICAL GROUND SUPPORT EQUIPMENT Electrical power generation
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Title: Renewal of the drinkable water network	
EMITS IITT: 20.CSGK.038	
<p>The European Spaceport is covered by a drinking water network of more than 50 kilometers.</p> <p>Through the present activity, the existing ageing system needs to be renewed, as well as adapted to state-of-the-art requirements on environmental impacts.</p>	
Required Skills:	ENGINEERING / CIVIL ENGINEERING drinking water network
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024

Title: Refurbishment of partial areas of the "Route de l'espace"	
EMITS IITT: 20.CSGK.028	
<p>The European Spaceport is covered by a road network estimated at more than 50 km. The existing "Route de l'espace" is becoming ageing and this activity aims at ensuring its renewal.</p> <p>Following ongoing assessments on flow optimization before ITT publication, new paths could be consequently implemented.</p>	
Required Skills:	ENGINEERING / CIVIL ENGINEERING road building
Estimated Budget:	
Estimated date of the Tender:	period 2020-2024