Prezentace firmy CSRC obsahuje:

• hlavní činnost
• certifikáty a audity
• organizační struktura
• CSRC moduly ve vesmírném prostoru
• minulé a současné vesmírné projekty
• strategie blízké budoucnosti
• reference a kontakty

Vypracoval: Ing. Marek Šimčák Ph.D.
Czech Space Research Centre
CSRC in the European space business since 1994
1. Introduction

CSRC was established in 1994 with the aim to promote and develop space activities in the Czech Republic.

Europe

- Second largest Czech City
- 400,000 inhabitants
- Industrial Centre
- University Centre

Limited liability Co. (Ltd.)
Privately owned
Residing in Brno
2. Main Activities

**Complex Space Electronics Project Realization**

*Electronics Design and Cleanroom Manufacturing*

**Design Group**
- Hardware & Software Design
- Analyses and Simulations
- Testing and Integration
- High Precision Mechanics Design
- Prototype production

**Manufacturing Group**
- Space Electronics Manufacturing
- FM & EM PCB Assembly
- Own Cleanroom 100.000 Class
- ESA Certificated Operators
- ESA Qualified Procedures
3. Certificates & Audits

Based on ESA’s internal evaluation CSRC was selected as a leading representative of the Czech SMEs operating in the field of Complex Space Electronics Design and Cleanroom Manufacturing.

As an ESA audited Czech company, CSRC is an ATTRACTIVE BUSINESS PARTNER for the whole international space industry.
4. Organization Structure

Managing Director
Zdenek Kozacek

Accounting
Jaroslav Zarsky

Deputy Managing Director
Jan Brinek
Deputy Managing Director
Marek Simcak

Quality Assurance
Lukas Kozacek

Documentation
Zdenek Petruzela

External Financial Department

University and Academic Research
Prof. Jaromir Brzobohaty

Public Relations
Massimo Conte

Mechanical Design
Jiri Krcma

HW/SW Design Group Brno

MANUFACTURING
Marek Simcak
Deputy Managing Director

Quality Inspection
Michal Sedlacek

Research & Development

Manufacturing Group Kromeriz
5. CSRC Units Operating in the Space

Complex development, design, analyses, manufacturing, testing, delivery including support in acceptance campaign and integration phase

INTEGRAL - PSAC Project
Plastic Scintillator Anti-Coincidence
Flight unit for photomultiplier high-voltage control

SMART1 - EPDP Project
First European mission to the Moon
EPDP Measuring Unit, CAN bus

DEMETER - I/V Converter Project
I/V converter for Langmuir probes
HW converting low-current of pA to µA range to voltage
French Space Project

PROBA2 - DSLP&TPMU Project
Data processing & communication unit
2x I/V converters for segmented Langmuir probes
HW converting low-current of pA to µA range to voltage
6. Other Past Space Projects

1. AGILE
The MCAL DFE (Minicalorimeter Digital Front-End) test equipment has been designed for the AGILE project (gamma rays research) of the Italian Space Agency. The test equipment (TE) will test functions of the minicalorimeter interface to the scientific console - transmission of measured data and receipt of control commands. The TE includes stabilized power supplies.

2. MALST
Device monitoring and recording speed and direction of the moving turtles sending data to the ARGOS Satellites.

3. SMART FUEL
Research and development on modeling tools for distributed intelligence-based fuel systems, Fuel System Specification Language, HW/SW interface, project within the EU 6th Framework Program (FP6).

4. FM/EM PCB Cleanroom Manufacturing
EPIC    METOP    SATELCOM    NODE 3
INTEGRAL GOME 2    DEMETER    LANGMUIR PROBE
PSAC    CLUSTER II SMART    PCDF-CCD HEAD
PROBA 2 MONSTER    SWARM/TEASER and others…
7. Currently Running Space Projects

1. METEOSAT THIRD GENERATION (MTG)
   “Preparatory Activities for MTG Participation”, the ESA AO-6052 project for full qualification in PCB cleanroom manufacturing compatible with small series, the strategic entrance towards Operating Satellites.

2. ACES EUROPEAN LASER TIMING (ELT)
   “European Laser Timing instrument for ACES”, complex FM design & manufacturing of the atomic clock synchronization module for the ISS.

3. SWARM

4. TARANIS
   “TARANIS Satellite”, the CNES microsatellite project dedicated to the study of impulsive transfers of energy between the Earth atmosphere, the ionosphere, and the magnetosphere.

5. LANGMUIR PROBE
   “Langmuir Probe Experiment”, the ESA AO-6052 study project in co-operation with the Czech Academy of Science, the Astronomic Institute.

6. SMART FUEL 2
   “SF 2”, the EU 6th Framework Program project, research and development on modeling tools for distributed intelligence-based fuel systems.
8. Near Future Strategy

VISION

- To be considered as a professional and reliable partner inside the European space family.
- To be choice **No.1** for space project customer in the field of complex electronics design and cleanroom manufacturing in the Czech Republic.

GENERAL STRATEGY

- Offering complex space project realization based on close co-operation with Scientific, University and Industrial partners.
- Offering interesting products and services to other ESA partners.
- Entering into the “world” of Operational Satellites with a special role of the Meteosat Third Generation (MTG).
- As a Czech company, closely co-operating with CSO, CSA and ESA, putting max.effort into developing the Czech space industry.
- Selecting a long-term strategic space business partner supporting and sharing development and prosperity of CSRC.

“INTERNATIONAL CONSORTIA” STRATEGY

- Becoming a desired partner for international space consortia.
- Establishing our own space consortia offering challenging opportunities to other members of the European space family.

Member of International Consortia

European Polytechnic Institute

Astronomical Institute

Institute of Atmospheric Physics

BRNO University of Technology

FP5, FP6 Project running

New, Space activity

New, Space activity support

First joined project

Satellite Demeter Project I/V converter

Second joined project

Running projects: Satellite TARANIS

LISA - AO/1-6054/09/NL/HB

Satellite Proba 2 Project DSLP&TPM

AO 6052 Strategic Proposal MTG

ESA

New, own proposal

AO 6052 support

joining AO6052 proposals

Satellite Demeter Project I/V converter

Industrial resources

Human resources

Thales Alenia

EADS Astrium

???

Member of International Consortia

CSRO
10. References

[Logos of various space and aerospace companies and organizations, including ESTEC, Thales Alenia Space, RUAG Aerospace, Lush Space, Austrian Aerospace, and CEDO.]
Thank you for your attention.

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