Joint-Stock Company
«National Company «Kazakhstan Gharysh Sapary»

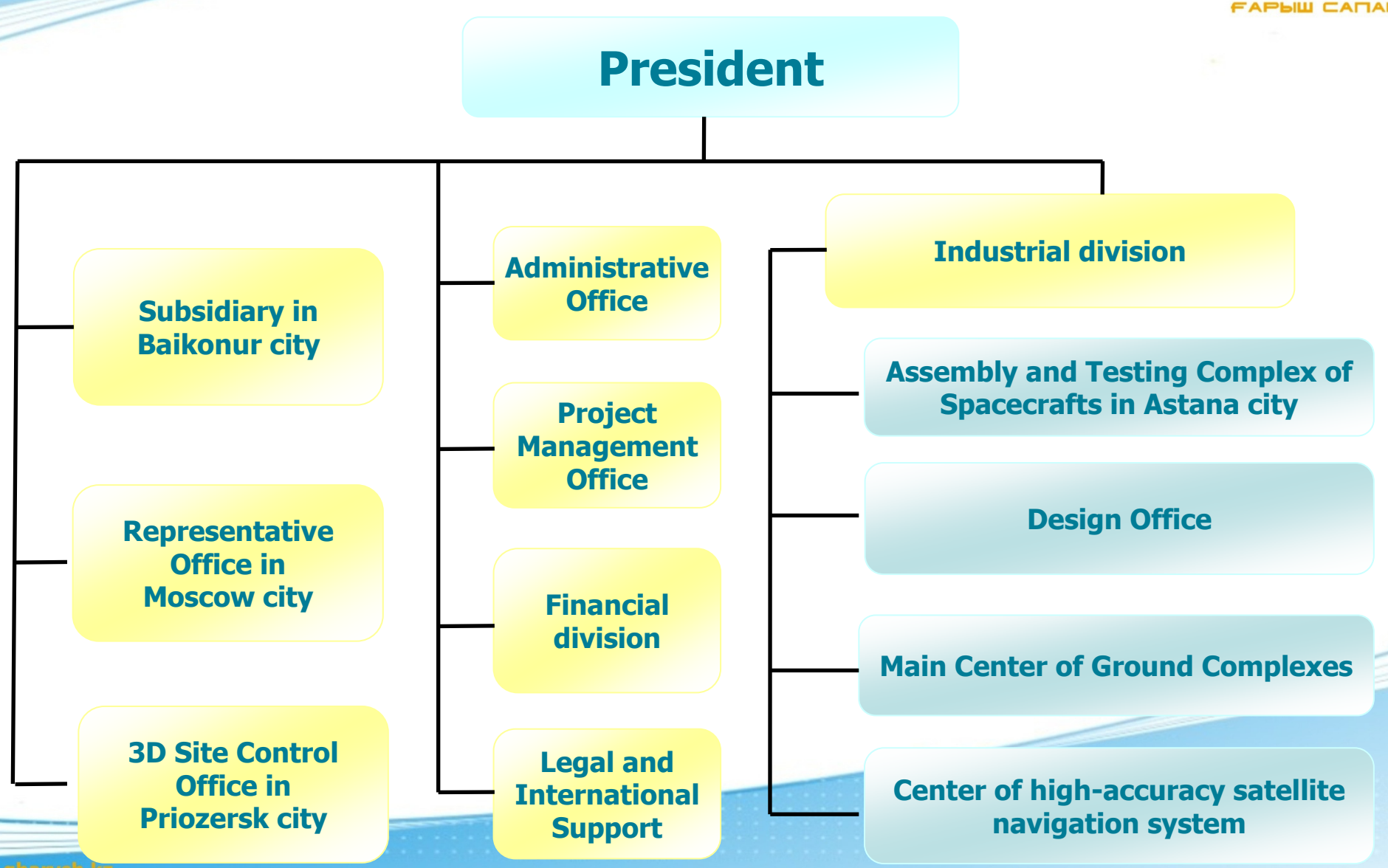
Astana, 2010

COMPANY'S MISSION AND VISION

Mission: to implement competitive space technologies for the benefit of the Republic of Kazakhstan.

Vision: by 2020 we are high-tech, progressively developing Company (including its subsidiary and affiliated organizations), independently able to design, create and operate competitive space systems and render qualitative services-in-demand on regional and global markets.

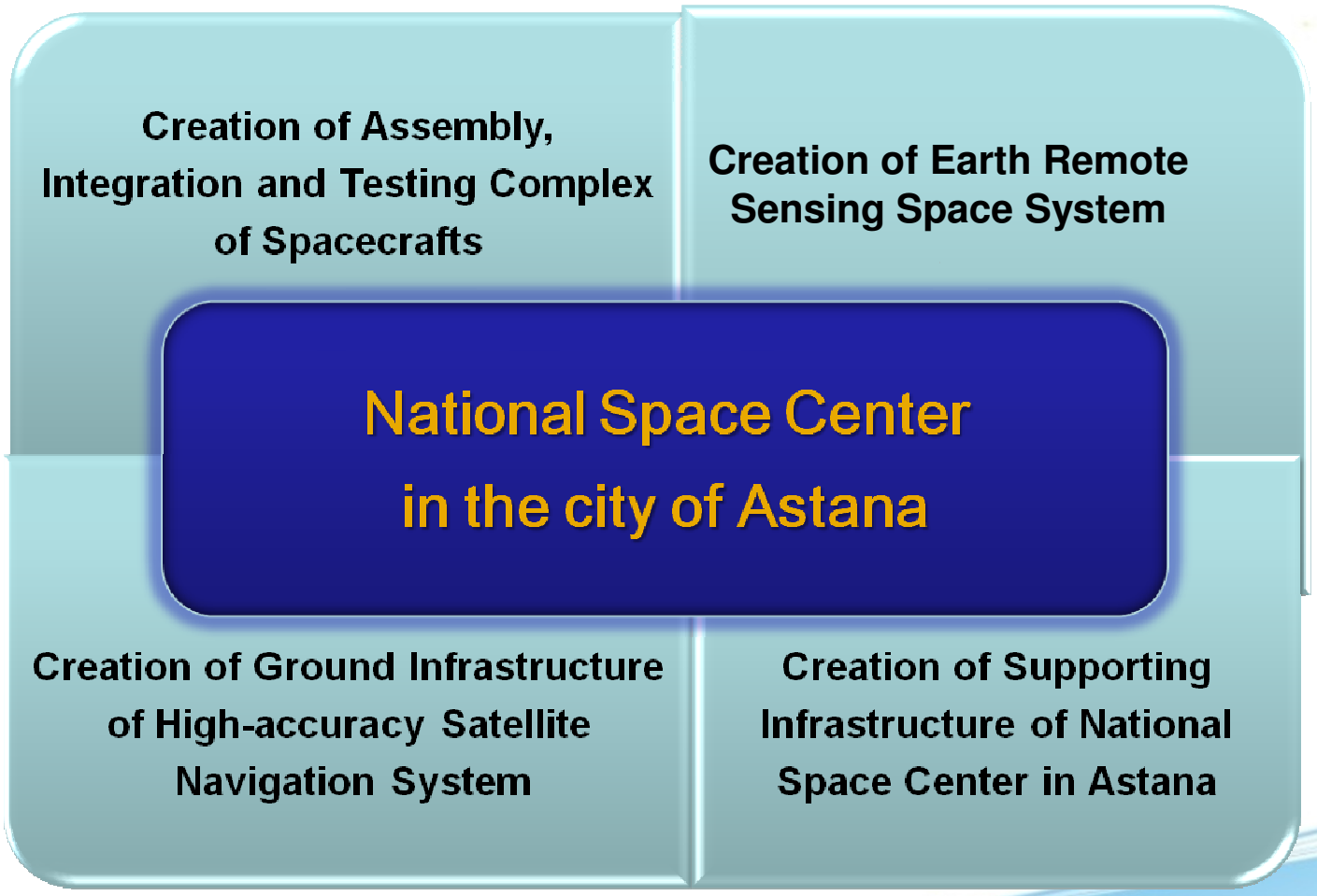
ORGANIZATIONAL STRUCTURE



Main projects of the Company

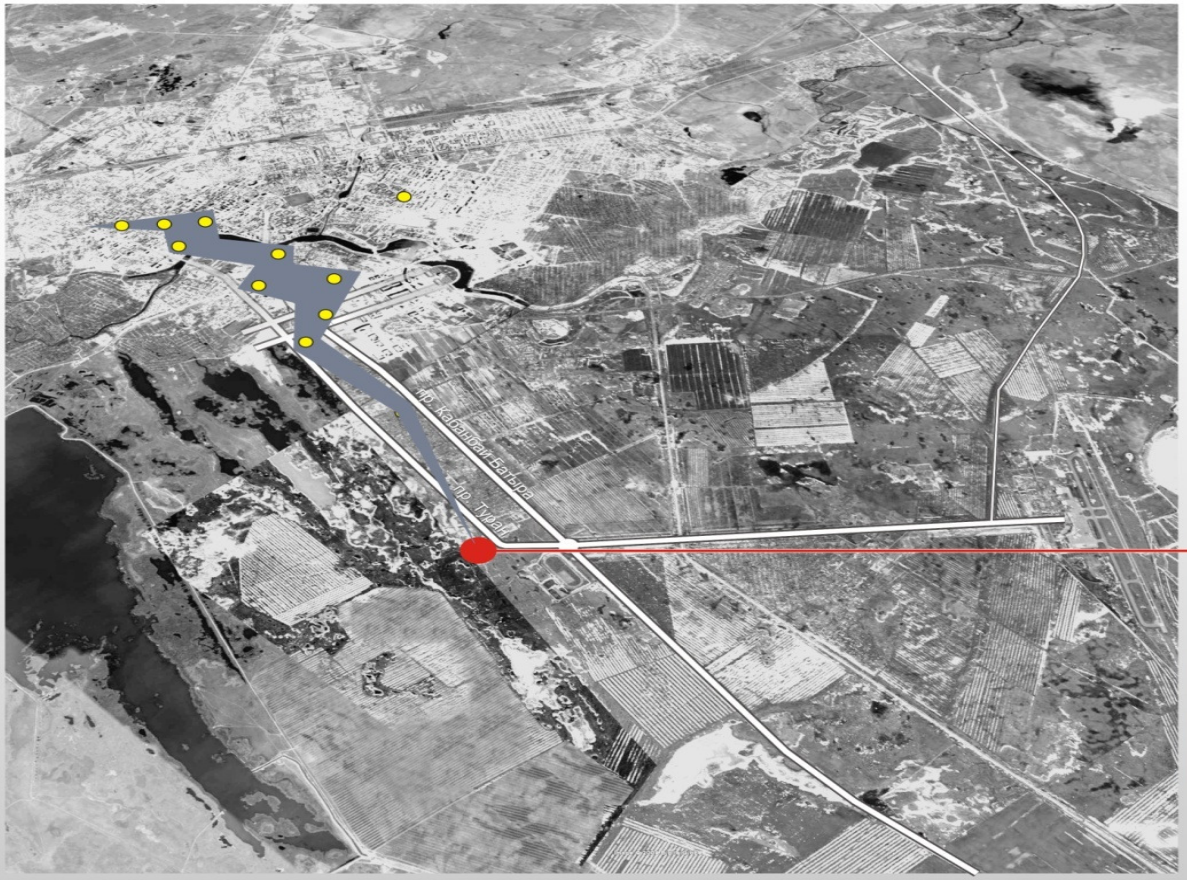
- Creation of Earth Remote Sensing Space System of the Republic of Kazakhstan (ERS SS RK)
- Creation of the Assembly, Integration and Testing Complex of Spacecrafts (AITC SC)
- Creation of the Ground Infrastructure of the High-accuracy Satellite Navigation System (HASNS RK)

COMPANY'S PROJECTS



Layout scheme

Allocation scheme



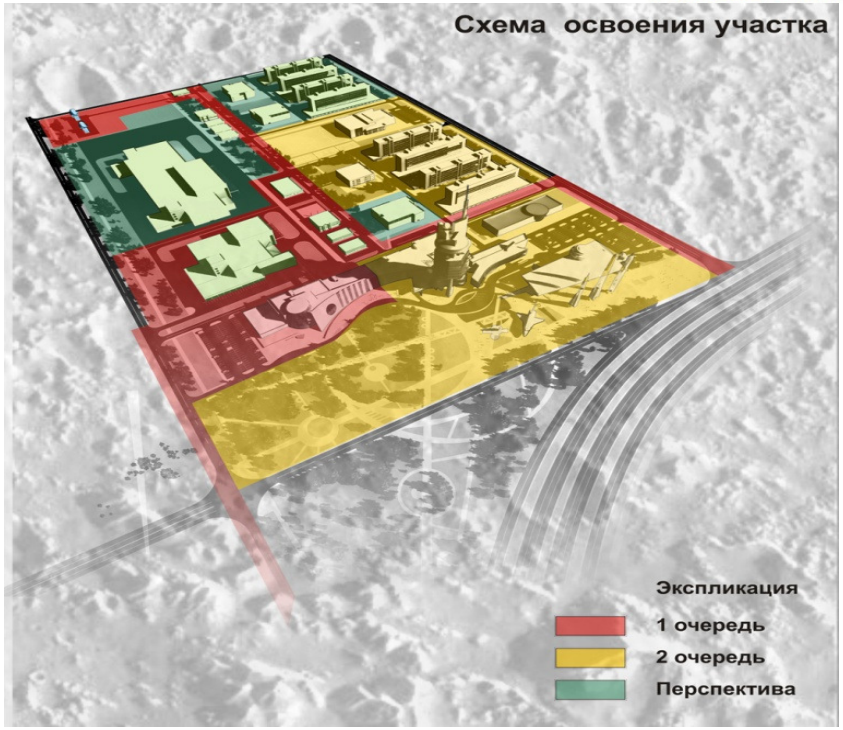
Ситуационная схема

Architectural solution

Architectural solution of the Space Center in the city of Astana

In terms of functional requirements the territory is divided into 5 areas:

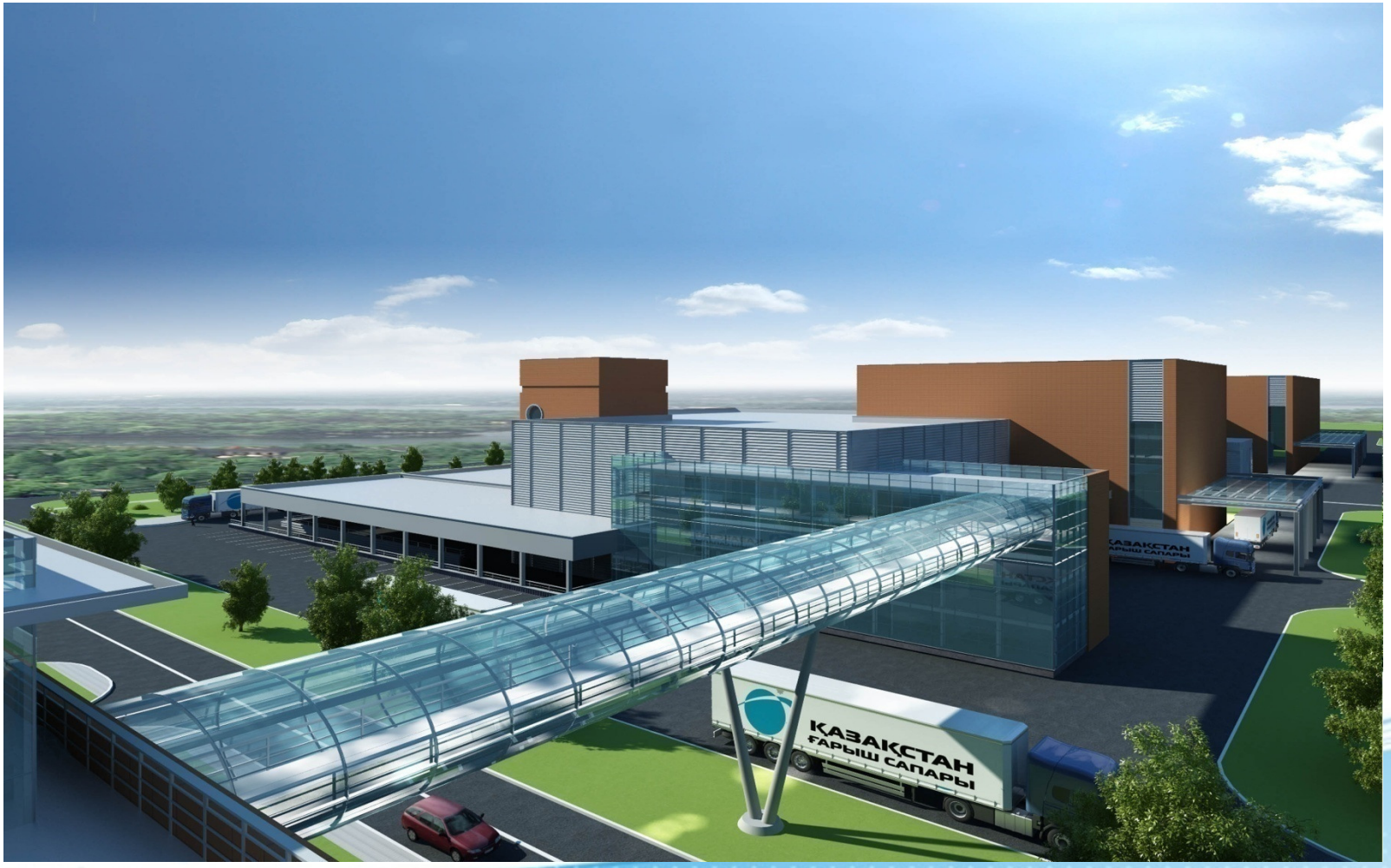
- **Administrative area**
- **Industrial area**
- **Representative area**
- **Residential area**
- **Educational area**



In terms of level of site development the construction is divided into stages:

- 1st stage of construction
- 2nd stage of construction
- Prospect of development that in the future can be additionally divided into the stages of construction

Project on "Creation of Assembly, Integration and Testing Complex of Spacecrafts"



Project on "Creation of Assembly, Integration and Testing Complex of Spacecrafts"

Purpose of the project:

Creation in the Republic of Kazakhstan of the technological and production base for assembly and testing of spacecrafts (SCs), payload components and elements of space technologies.

Participants of the project:

JSC «NC «Kazakhstan Gharysh Sapary» and «EADS Astrium» company – Strategic partner.

Period of the project realization:

2009-2012

Expected results:

Creation of the high-technology enterprise for development, manufacturing, assembly and testing of spacecrafts of different purposes, including the Special Design-Technological Office of Space Technology and Assembly, Integration and Testing Complex of Spacecrafts.

JOINT VENTURE «GHALAM»

Objective: Creation in the Republic of Kazakhstan of high-tech enterprise for assembly, integration and testing of spacecrafts, payload components and space technology elements.

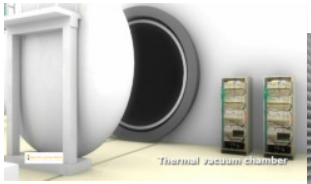
Participants:

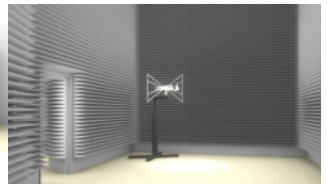
– JSC «NC«Kazakhstan Gharysh Sapary» (Kazakhstan)
– EADS Astrium company (France)

JOINT VENTURE «GHALAM»

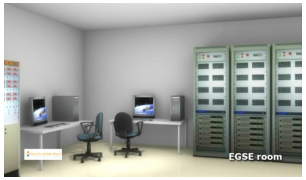
1. Industrial divisions of the Joint Venture shall include:

- Design-Technological Office providing conduction of all design and engineering works;





- Assembly, Integration and Testing Complex providing complete cycle on assembly and testing of spacecrafts;

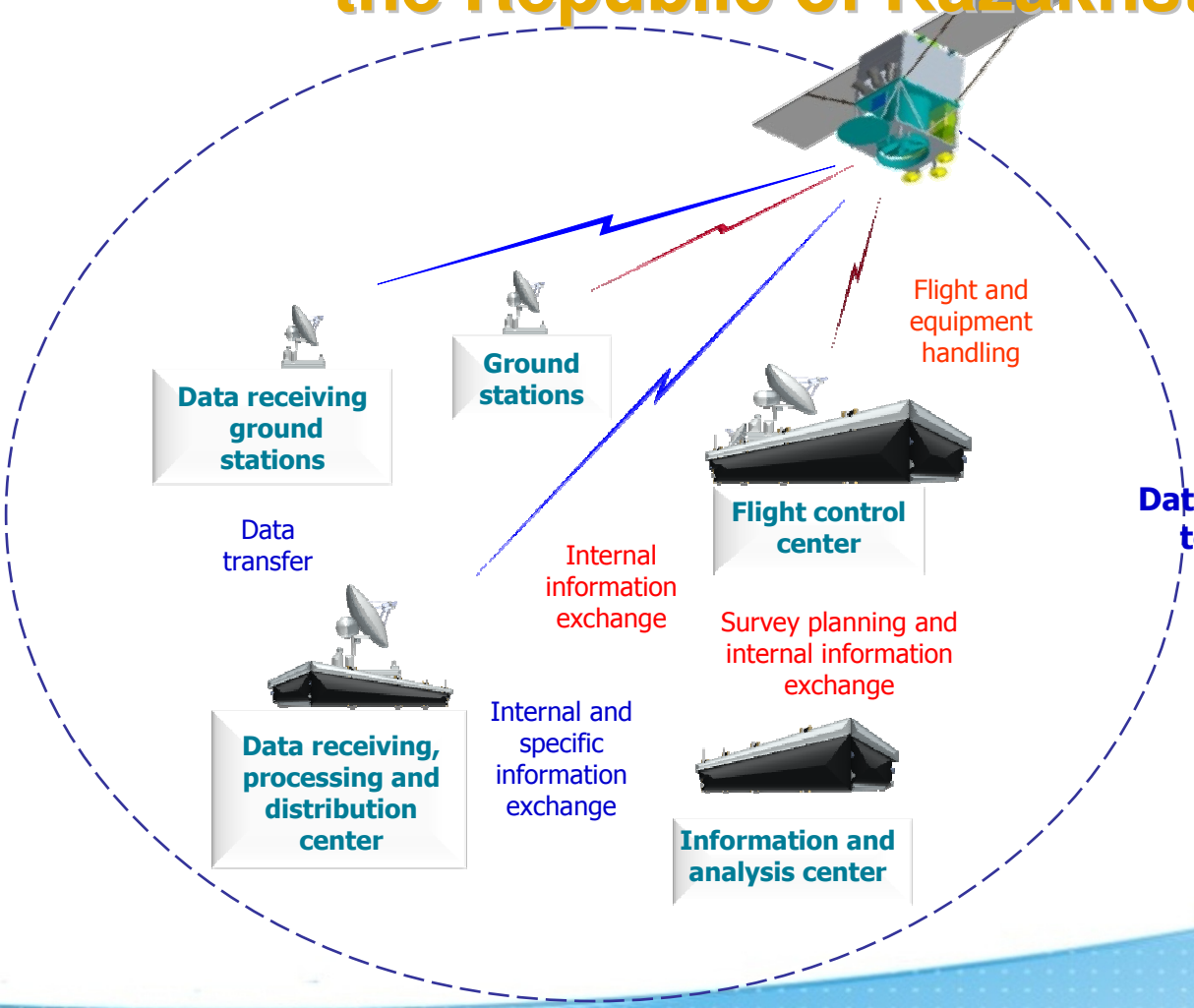


- Production areas on creation of spacecrafts components.

Prospective directions of organization of production of component units

- Fine mechanics
- Cable production
- Insulator material production
- Solar sensors
- Solar panels
- Components of electronics

Project on «Creation of Earth Remote Sensing Space System of the Republic of Kazakhstan»



Data transfer to users

- Governmental bodies of the Republic of Kazakhstan
- Official governmental bodies on the regional level
- Enterprises and organizations
- Commercial companies
- Scientific institutes

Project on «Creation of Earth Remote Sensing Space System of the Republic of Kazakhstan»

Purpose of the project: Creation of the Earth Remote Sensing Space System of the Republic of Kazakhstan (ERS SS RK) including two ERS Spacecrafts, Ground control complex and Ground dedicated complex for space data reception and processing.

Period of the project realization: 2006-2014.

Participants of the project: JSC «NC «Kazakhstan Gharysh Sapary» and Strategic Partner – «EADS Astrium» company (France)

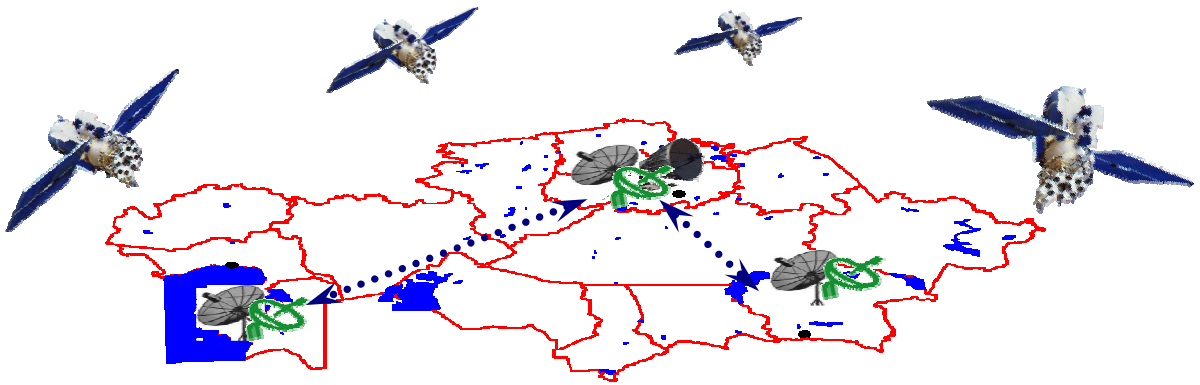
Expected results:

- Trained staff of specialists on ERS SS operation;
- Creation of the Earth Remote Sensing Space System ensuring ERS data delivery for solving problems of different sectors of economy;
- Technology transfer and training of specialists in the field of Spacecrafts' designing.

Earth remote sensing market development in the Republic of Kazakhstan

- It is planned to expand the ERS SS by supplementing of 2 radar satellites for providing space images to different economic sectors;
- It is planned to update optoelectronic satellites of the ERS SS after 7 years;
- It is supposed to provide effective promotion of Company's services to the market with usage of the geo-portals and the mechanisms of e-commerce by means of online sales center;
- Providing of Company's Services on ERS data processing will be realized with implementation of the modern high-performance technologies transferred by the Strategic partner under the transfer technology;
- Cooperation with the company Spot Infoterra Group gives an opportunity to have exclusive right on images and services distribution in Kazakhstan and in other countries of the world, as well as to provide integration with world space systems.

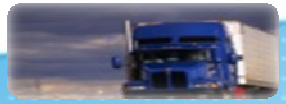
Project of creation of the ground infrastructure of High-accuracy Satellite Navigation System of the Republic of Kazakhstan (HASNS RK)



INTERACTION BETWEEN COMPONENTS OF THE SYSTEM










HASNS RK project

Purpose of the project:

Creation of the Ground Infrastructure of the High-accuracy Satellite Navigation System of the Republic of Kazakhstan (HASNS RK) for ensured receipt of qualitative coordinate-time and navigation services by users of information of the Global Navigation Satellite System (GNSS) in the territory of the Republic of Kazakhstan

Period of the project realization: 2008 – 2012.

Expected results:

- created and put into operation ground infrastructure of the high-accuracy satellite navigation system of the Republic of Kazakhstan and laboratory on conformance evaluation of satellite navigation equipment;
- pilot production of navigation equipment;
- technology transfer and trained technical staff on operation of the HASNS RK.

Project of "Creation of the scientific-technological space system"

Objective: development of technology on design and production of payload individual parts and spacecrafts, design, assembly and testing of spacecrafts (self-developed subsystems).

Participants: JSC "NC "Kazakhstan Gharysh Sapary" and JSC "National center of space research and technology"

Period of the project realization: 2012-2015

Expected results:

Scientific and technological satellite is to be launched, the results on development of the new technology design, spacecrafts assembly and testing, scientific research of Earth ionosphere, flight heritage for the technological payload (self-developed subsystem) are to be received.

NATIONAL SPACE LABORATORY

Within the National Space Center the National Space Laboratory will be created – oriented for conducting R&D and development of innovation technologies in the area of space activities.

Main purposes:

- Conduction of R&D in the space area,
- approbation of innovation technologies and technical solutions,
- testing of prototypes and industrial design of space technology,
- practical training of Kazakhstan specialists in designing and creation of space technology and its components.

For the purpose of cooperation joint problem solving of objectives to be realized in the frame of National space laboratory is proposed.

Expected results from implementation of the project of National Space Center creation

There will be formed the core of space industry of the Republic of Kazakhstan consisting of:

- High-tech enterprise – Assembly, Integration and Testing Complex of Spacecrafts , Design-Technological Office for Space Technology;
- Science-intensive ground segment of the Earth Remote Sensing Space System competitive in the world market of space services;
- Up-to-date ground infrastructure of the High-accuracy Satellite Navigation System;
- National Laboratory of Space Technology;
- Organizations of the National Space Agency of the Republic of Kazakhstan and other research organizations conducting scientific and technical developments in the field of space activity;
- ERS satellites', satellite navigation operators, and others;
- Objects for social and cultural purposes, including administrative building integrated with manufacturing process, center of training and re-training of space industry personnel.

ҚАЗАҚСТАН
ҒАРЫШ САПАРЫ

Thank you for your attention!

www.gharysh.kz