

Total Solution Provider for Earth Observation Missions Satrec Initiative

Focusing on your needs with innovative space technology



THE FIRST 10 YEARS WERE JUST THE BEGINNING.

Satrec Initiative (SI) is the right place to build your solid capability in Space Development.

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Who are you looking for?

Are you looking for more than just the big names? If you are looking for one that can share your vision and has solutions to meet your current needs with exhibited leadership in the development of new technology, SI is your best choice. Sharing your vision and needs, we guarantee you to provide the best solutions for your indigenous space technology development.





SI at a Glance

"We started out to do what we liked, and now we are working for customer success."

Establishment

- Started satellite development activities at the Korea Advanced Institute of Science and Technology, KAIST, in 1989
- · Spin-off from the university and commercial space activities from 1999
- · Located in the Daedok Science Town of Daejeon, Republic of Korea
- International cooperation with various countries in Asia, Middle East and Europe

Business area

- Specialized in developing high performance, yet economically competitive, small satellite systems for earth observation missions which meet your needs with more flexibility: satellite platform, payload, ground station, launch, operations, image processing and image applications.
- Training and consultancy services in satellite engineering, mission analysis, satellite system design, manufacturing and operation
- Eco-Friendly Radiation Detector with the spin-off space technologies

We have strong confidence in supporting you with our space experiences and technologies accumulated through over 20 space programs of our international and national partners over the last 20 years.

Challenging Space Smart

We love challenges, but in a smart way. Focusing on the customer's needs with innovative space technology, we have provided optimized high quality satellite solutions.

What are you looking for?

Whether you are new or experienced in satellite development, you will find the most effective solutions and assistances which you can combine your knowledge and experience with in SI.





SI for You

Our focus is the cost-effective development of reliable high-quality satellite solutions in tune with your needs.



If you need integrated solutions for indigenous earth observation programs with affordable budget, our high performance satellite systems could be a perfect solution for you. Combining our standard platforms and payloads, we can offer various turn-key earth observation satellite systems.

Also, we offer three segmental solutions, satellite platforms, electro-optical payloads and ground station systems.

World No. 1 Solution Provider for Earth Observation Missions SPACECRAFT BUSSpacecraft BUSAerospace Components

PAYLOAD

- EO/SAR Payload
- Communications Transponder
 Space Science Instruments

GROUND STATION

Mission Control Station

Satellite Image Receiving &
Processing Station

Our biggest interest is to go beyond the limit.

We never limit what we can do. We are ready to develop high-performance space systems tailored to your requirements.



SI Platforms



SI-200 BUS

- Total satellite mass of 150~300 kg and expandable up to 500 kg
 - Compact hexagonal frame structure
 - Volume and mass adequate for cost-effective launches
 - · Active full 3-axis attitude stabilization
 - High-speed data downlink capability
 - · Flexible reconfiguration for different missions and user requirements



SI-100 BUS

- Total satellite mass of 80~150 kg
- Compact and rigid structure
- · Volume and mass adequate for piggy-back launches
- Active full 3-axis attitude stabilization
- · High-speed data downlink capability for imaging / science payloads
- An excellent stepping stone for space technology acquisition with limited resources

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SI Payloads

Electro-optical Payloads







EOS-A

- Options
- Three multi-spectral bands of red, green & near IR (MS 10 m)
- One panchromatic and three multi-spectral bands of red, green & blue (PAN 7.5 m, MS 15 m)
- · Imaging system for 100 kg class satellites

EOS-C

- · High-resolution imaging in one panchromatic and four multi-spectral bands with high image fidelity (PAN 2.5 m, MS 5 m)
- Imaging system for 200 kg class satellites



EOS-D

- · High-resolution imaging in one panchromatic and four multi-spectral bands with high image fidelity (PAN 1 m, MS 4 m)
- Imaging system for 300 kg class satellites



EOS-H

- . 100-channel hyper-spectral imaging system based on a three-mirrorastigmatic telescope
- For land management, resource development and conservation, forestry, fishery and surveillance

Communication Payload



GEO SatCom Payload

- Beam switching Ka-band transponders
- Active multi-beam antenna

SI Ground Stations

Mission Control Station

- Tracking and ranging, telemetry monitoring and analysis, mission planning and telecommanding and precise flight dynamic controls
- User-friendly PC-based system



Image Receiving and Processing Station

High-speed data ingestion, real-time image recording and processing, standard image product generation, data management and catalog browsing
Change detection, DEM generation and multi-sensor triangulation







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Transportable Ground Station

- · Suitable for disaster monitoring and defense applications
- 20 feet EMI shielded MIL-grade shelters



SI Space Components

We have powerful in-house capabilities to design, manufacture and verify most of the satellite components. Especially, our components for satellite attitude control are in high demand for their qualities, flight heritages and attractive prices:

- Star Tracker
- GPS Receiver
- Magnetometer
- On Board Computer
- Solid State Recorder
- Coarse Sun Sensor / Fine Sun Sensor
- Magnetic Torque Rod / Magnetic Torque Driver
- S-Band Tranceiver / X-Band Transmitter
- Video Transmission System for Launch Vehicle

Explore what can benefit your space program in SI.



TRAINING & CONSULTANCY SERVICES

With the practical teaching approach of our highly experienced research engineers, you will be able to integrate the principles and techniques of satellite development. Our partners take stimulating coursework and consultancy in five key areas:

- Satellite engineering
- Mission analysis
- Satellite system design
- Manufacturing
- Operation









We develop the Eco-Friendly Radiation Detector with the technologies derived from satellite system experience. It has three unique functions:

- · Discrimination of the artificial radiation from the natural radiation
- Temperature stabilization of the acquired spectrum
- Operating in open environment without any additional shelter or air-conditioning

Identification of Radiation Source



Artificial Radiation (Cs-137)
Natural Radiation

Rainfall



Dose Rate Change During Rainfall

Do You Believe the Promised Results?

Our engineers and partners affirm that SI can deliver the promised results. SI's core engineers have over 20 years of design, build and integration experience, with a history of providing advanced technology solutions to industries, research institutions and government agencies of Asia, the Middle East and Europe.





The programs our engineers have been actively involved in

- Seven Korean national space programs: KITSAT-1, 2, 3, STSAT-1, KOMPSAT-1, 2 and KSLV-1
- Seven missions of our international partners' space programs

Our recent highlights are two small yet highly agile satellite systems that we successfully designed, built and tested with our partners from Malaysia and UAE. After several years of strenuous efforts, we finally had both satellites launched successfully in July, 2009. Both satellites are now in perfect operation, providing valuable high-resolution image data of the earth.

Currently, we are involved in

- Three national space programs: COMS-1, KOMPSAT-3 & 5
- · A one-meter resolution small satellite development program

Additionally, we are developing

- For earth observation missions of our overseas partners
 - Several primary optical payloads
- Satellite attitude control sensors
- Major space components
- Synthetic aperture radar satellite

Our partners are satisfied with our solid background in complete systems engineering from concept to launch and operation. What they value most is our drive for ground-breaking innovation that encompasses their ambitious requirements. We are always ready to take your mission from concept to space with a small portion of a large satellite program's budget by providing successful and responsive solutions that meet your stringent needs.



Advantages for You?

Our cooperative and innovative development is second-to-none

We work with you in a team with the one-on-one interaction and innovative approach to unprecedented goals. Our veteran project management team combines our experienced engineering staff with your staff and systematically leads the project based on the schedule, maintaining close communications both to offer cost-efficient yet reliable solutions and to ensure success. Upon the completion of your project with us, you will have:

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- A strong base in the core skills of space development gained from practical hands-on experience
- Sustainable relationship that constantly helps each other in need.
- Innovative R&D capabilities
- Problem solving skills









We are Looking Forward to Tomorrow

People ask us how we have successfully maintained long term relationships with our customers and how we have rapidly expanded our business areas and markets in just a decade. You can find the answers below.

People we work with

What we learned over the past 10 years is that any success we had is a direct result of the teams that we work with. Our people are the core strength of SI.

Passion for innovation

Passion for innovation and persistence are our skeleton keys that can open any doors. Our enthusiastic engineers keep themselves on the cutting-edge of new technologies in the innovation-adept culture of SI.

Trust with our partners

Strong trust which we have built with our partners over the past 10 years has positioned us abreast the latest in the small satellite industry. From the first moment you contact us, we sincerely appreciate getting to know you and promise to be your highly valued partner by providing innovative solutions, advanced technology, superior engineering and management excellence.

We truly believe that these three core keys will move us towards higher stages. we look forward to tomorrow with confidence to realize your dreams in space. We assure that here in SI, you will engage with who are driven to make a positive difference in space development. CHALLENGING SPACE SMART



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