

AIM-SIRIUS Deep Technology Learning, Innovation Programme

April 26, 2020

Context: The second phase of NITI Aayog's Atal Innovation Mission (AIM) and Russia's SIRIUS Deep Technology Learning and Innovation Programme 2019 in Sochi was recently concluded

- Memorandum of Understanding signed between AIM and SIRIUS last year for collaboration and student exchange program.
- The objective of the Program is to enable students from both countries to ideate and prototype innovation addressing problem statements from diverse sectors ranging from Scientific research, Medicine, 4th Industrial revolution, Architecture, Design, Arts, to Mathematics, Data Analytics and Frontier technologies.
- All 50 Russian and Indian students shared best contemporary innovation practices with each other under various categories: IT & Data Analysis, Clean Energy, Biotech, Remote Earth Sensing and Drones & Robotics. Under 'IT & Data Analysis', students created a classification of farmland using satellite data and neural networks for effective management of crop land.
- Under 'Clean Energy', students created a carbon free energy system/island where researchers from all over the world can lead research on tech advancement. It can sustain energy requirement of up to 600 people. Another interesting prototype under this included a classification model for tree type and forest type for forest resource inventory management. These classifications can help various industrial sectors to automate and manage systems and resources.
- Similarly, under 'Drones and Robotics', an automated

dual robot system was created, which, while collecting tea leaves using machine vision algorithms, gets rid of low-quality leaves and shoots, hence improving the quality of the collected tea products.

- Under 'Biotech', students made optimization of protein isolation methods from bacterial culture by genetic engineering. It makes the production of therapeutics (Medicine) cheaper and faster. Photo-biotechnology under 'Biotech' category was also designed for the production of bio antioxidants from microalgae. It overcomes the problems of food shortage and environmental pollution by making better and safe food and absorbing CO₂ from the environment for photosynthesis.
- Under 'Remote Earth Sensing', students created an extraction of satellite images. Detailed surveying of the images can help curb deforestation. It helps in quick detection of forest fires, thus enabling remedial steps required.

Atal Innovation Mission

- Atal Innovation Mission (AIM) is NITI Aayog's flagship initiative to promote a culture of innovation and entrepreneurship in India.
- AIM also serves as a platform for promotion of world-class Innovation Hubs, Grand challenge, Start-up businesses and other self-employment activities in India, leveraging state of the art, advanced and affordable emerging technologies.
- The Atal Innovation Mission has thus two core functions:
 - **Innovation promotion:** To provide a platform where innovative ideas are generated.
 - **Entrepreneurship promotion:** Wherein innovators would be supported and mentored to become successful entrepreneurs at Incubation Centres.