



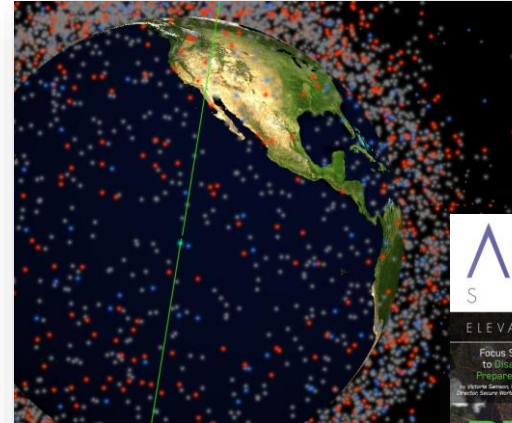
Promoting Cooperative Solutions for Space Sustainability

Regional Space Cooperation: Spotlight on Latin America

Laura Delgado López
Project Manager
Secure World Foundation

©2016 Secure World Foundation. Used with Permission

- SWF is a private operating foundation dedicated to the secure and sustainable use of space
- ***Why space sustainability?***
Increasing reliance on space assets coupled with potentially destabilizing trends
- SWF Focus Areas
 - Space Sustainability
 - Space Law and Policy
 - Human and Environmental Security

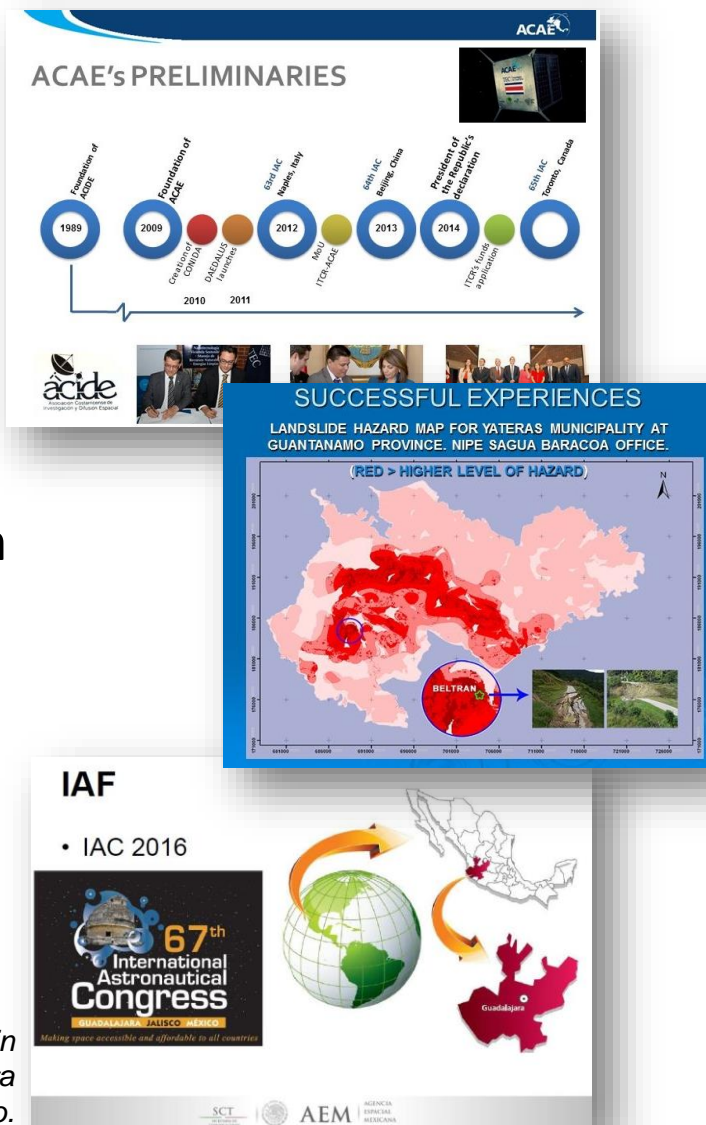


Screenshot from Stuffinspace.net; cover of Apogeo Spatial spring issue; panelists at “Challenges in Sharing Weather Satellite Spectrum with Terrestrial Networks” event held in Wash. D.C.

Background: Space in Latin America

- Range of space development across the region, recent emphasis on formalization and diversification
- Development steps vary; active mix of industry, government, and academic activities
- Some programs had military beginnings in the 1960s, others a more recent emergence (2000s)
- Two main trends:
 - *Challenge of making the case for space*
 - *Strong linkage with practical goals of development agenda*

Slides from SWF-ACAE workshop in 2015 by representatives from Costa Rica, Cuba, and Mexico.



ACAE's PRELIMINARIES

Timeline of key events:

- 1989: Foundation of ADE
- 2009: Foundation of ACAE
- 2010: Creation of COMPRO, DNASOLUS, Invariance
- 2011: 63rd IAC, Havana, Cuba
- 2012: IACU, ITDR-ACAE
- 2013: 64th IAC, Beijing, China
- 2014: Presentation of the public's declaration, ITDR, Inter-Integration
- 2015: 65th IAC, Toronto, Canada

SUCCESSFUL EXPERIENCES

LANDSLIDE HAZARD MAP FOR YATERAS MUNICIPALITY AT GUANTANAMO PROVINCE, NIPE SAGUA BARACOA OFFICE.

(RED > HIGHER LEVEL OF HAZARD)

Map showing landslide hazard levels in Yateras Municipality, with a red area indicating higher hazard. A callout box labeled 'BELTRAN' shows a close-up of a landslide area.

IAF

- IAC 2016

67th International Astronautical Congress
GUADALAJARA, ZALISCO, MEXICO

Map of Mexico highlighting Guadalajara.

Logos: SCT, AEM, AGENCIA ESPAÑOLA DE INVESTIGACIONES ESPaciales

Snapshot of space nations

ARGENTINA



- Since 1960s; civil agency est. 1991
- Latest national space plan for 2004-2015
- Broad range of activities; including Tronador rocket program

BRAZIL



- Since 1960s
- Civilian agency est. 1994
- PNAE issued in 10-year increments (latest 2013)
- Focus on industrial development, and meeting national needs

COLOMBIA



- Momentum with 2002 CEA hosting
- Coordinative functions under Vice Presidency (CCE)
- Academia a primary player, ex. cubesat university programs (Libertad 1)

Snapshot of space nations

MEXICO



- Since 1950s – decentralized activities
- Agency est. 2010
- PNAE issued in 2012
- Industry roadmap - Orbit Plan - issued 2013
- IAC host in 2016

PERU



- Est. 1974 (Ministry of Defense), space agency since 2007
- Joined APSCO in 2005
- 2016 est. satellite imagery processing center

VENEZUELA



- Agency est. 2007
- Emphasis: telecomm; Earth observations
- VeneSat-1, VRSS-1
- Progress towards indigenous capabilities

A consistent theme

- Captured in the statements and plans of the agencies and country leadership
- Couched as both need (technology transfer) and commitment (political goal)
- Manifest through bilateral, regional, and multilateral (international) engagement

Drivers for regional cooperation

- Shared socioeconomic challenges = drivers for space investment
- Limited resources (financial, institutional, human capital)
- Political commitment to regional development

Regional cooperation mechanisms

Bilateral agreements and programs

- Range from general statements of shared goals and goodwill to detailed agreements laying out shared tasks and responsibilities
- Examples of bilateral agreements within the region:
 - Brazil: **Argentina**, Chile, Colombia, Peru, Venezuela
 - Venezuela: **Uruguay**, Brazil, Argentina, Bolivia
- Important to note bilateral cooperation is not limited to regional partners



Above: Uruguayan and Venezuelan flags; Japanese and Brazilian flags.

Multilateral

- Within international frameworks, examples of regional structures to promote coordination and develop shared positions:
 - AmeriGEOSS (Group on Earth Observations)
 - GRULAC (United Nations: General Assembly and COPUOS)
- Space-focused regional efforts:
 - Space Conference of the Americas (CEAS) - Seven regional conferences since 1990. Latest (VII CEA) celebrated in Nicaragua in 2015
 - Central American Association of Aeronautics and Space (ACAE) – based in Costa Rica, focused on Central American sub-region
- Standing regional conferences have also emerged:
 - Latin American Remote Sensing (LARS) Week, International Air & Space Fair (FIDAE), Latin American Cube Sat Workshop, etc.

- Space in the region: Diversity of experiences, common priorities and areas of interest
- Commonalities manifest in consistency of views on space-related issues (e.g. space security and space sustainability)
- BUT – group dynamics not just defined geographically (e.g. BRICS); strong partnerships also exist with countries outside of the region (e.g. Brazil and China)
- Main shared challenges impacting space efforts/ cooperation:
 - Lack of resources
 - Lack of sustained political commitment
 - Limited institutional coordination
- Real momentum across the region has also manifested itself in innovative partnerships: *space is there to stay*



Promoting Cooperative Solutions for Space Sustainability

THANK YOU!

Questions? Comments?

ldelgado@swfound.org