



32nd Annual **INCOSE**
international symposium

hybrid event

Detroit, MI, USA
June 25 - 30, 2022

by George Sousa, Fábio Silva, and João Prado

The Creation and Evolution of INCOSE BRASIL

www.incose.org/symp2022



Value streams





Evolution of INCOSE BRASIL

By the late 1990s a few Brazilian engineers had initiated involvement with INCOSE through various venues, particularly through graduate-level academic work involving international collaboration

1990s



Geilson Loureiro started teaching graduate level Systems Engineering (SE) at the Aeronautics Institute of Technology (ITA)

Geilson Loureiro and Robert Halligan met at the Massachusetts Institute of Technology (MIT) and discussed how to promote SE in Brazil

2005



2003



2003

Establishment of INCOSE Student Chapter at VIRGINIA TECH affiliated to the INCOSE Washington Metropolitan Area (WMA) Chapter, with Brazilian members, under the leadership of George Sousa and faculty support from Eileen Van Aken at the Enterprise Engineering Research Lab (EERL)

2004



George Sousa started teaching undergraduate and graduate level SE and System Dynamics (SD) at the Pontifical Catholic University of Paraná (PUCPR) in an Industrial Engineering and Mechatronics environment

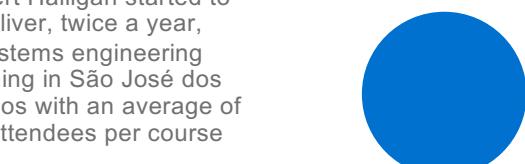




Evolution of INCOSE BRASIL

Robert Halligan started to deliver, twice a year, systems engineering training in São José dos Campos with an average of 20 attendees per course

2006



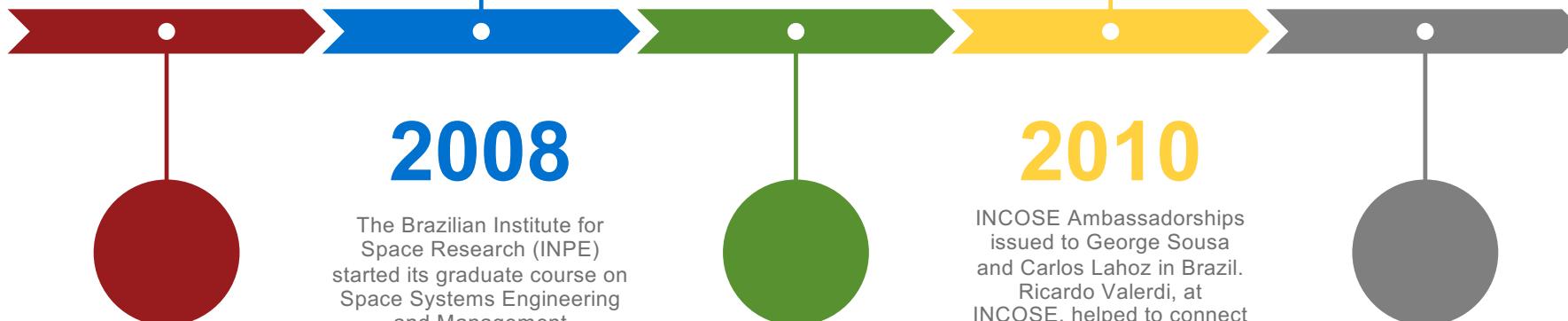
ITA started its undergraduate course on Aerospace Engineering with a discipline in Systems Engineering

2010



Carlos Lahoz, Geilson Loureiro and George Sousa started a series of events at INPE to promote awareness in SE and the idea of a Brazilian INCOSE Chapter. Robert Halligan provided support in some events.

2010



INCOSE Ambassadorships issued to George Sousa and Carlos Lahoz in Brazil. Ricardo Valerdi, at INCOSE, helped to connect separate SE communities in Brazil.





Evolution of INCOSE BRASIL

Creation of an INCOSE BRASIL discussion group on LinkedIn. Increased awareness of the need for a minimum of 25 members to start an INCOSE Chapter in the country. Academy, industry and government involvement.

2010



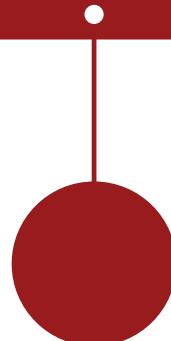
A core group of organized leaders emerged. A more advanced plan for the chapter creation was traced. Decisions on desired emergent behaviors, functional, and formal elements were made. Legal aspects and administration were addressed.

2011



Intensification of in person events including SE Days and SE Weeks

2013



2010

Launching of the first Systems Engineering undergraduate course in Brazil at the Federal University of Minas Gerais (UFMG)



2012

A group of people came together in the premises of INPE in São José dos Campos to have a public say in the creation of a professional organization with established principles and bylaws aligned and recognized by INCOSE. The INCOSE BRASIL Chapter was founded and became the first INCOSE Chapter in Latin America.

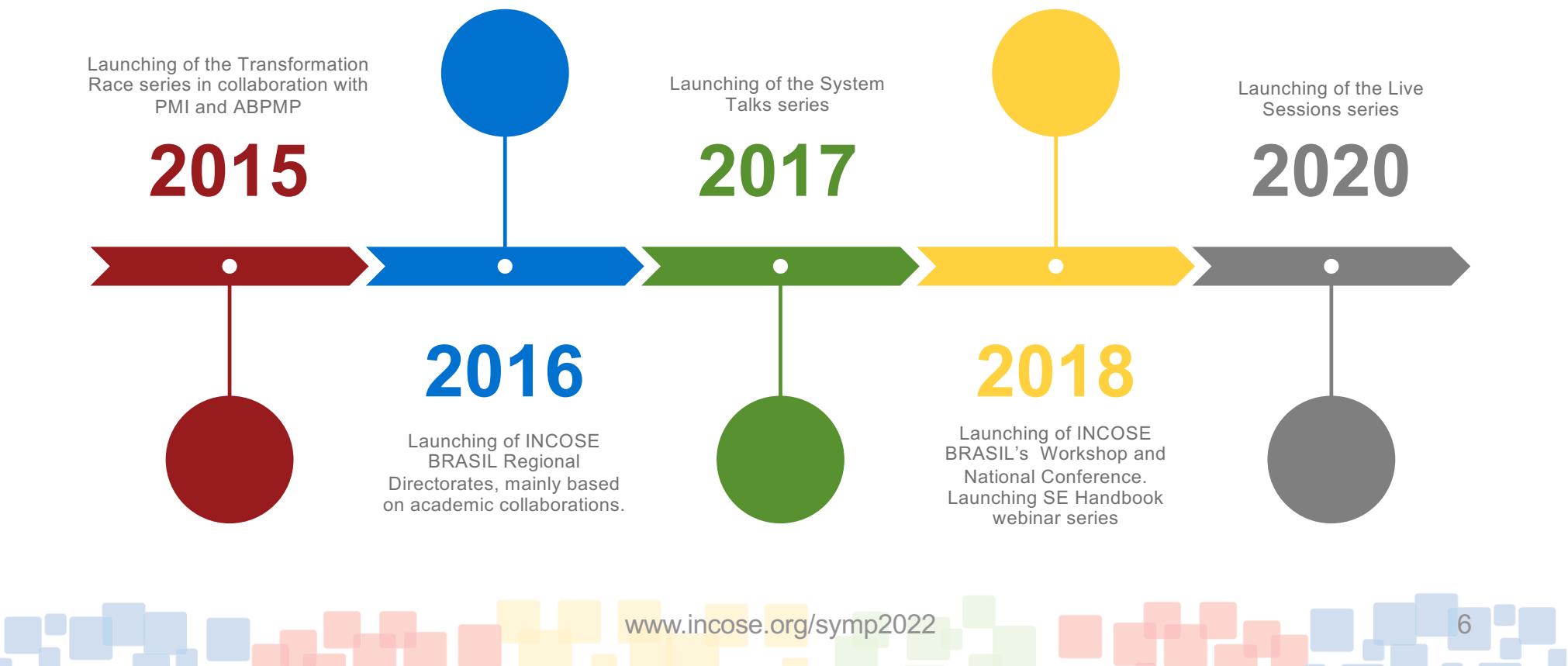


www.incose.org/symp2022





Evolution of INCOSE BRASIL





Chapter conception

A national entity, to serve simultaneously as the Brazilian section of INCOSE as well as the Brazilian National Association of Systems Engineers.

The idea was to create a single, designated point of contact and a mechanism for coordinating the systems engineering community.



Alignment with INCOSE

INCOSE BRASIL
Operational concept

The intention was to remove unnecessary administrative barriers that could create incompatibility of procedures or prevent the flow of value in the chapter operations





Organizational structure





Regional directorates

A means to nurture an essential social component related to camaraderie, stewardship, and pride that emerges through face-to-face interaction.

INCOSE BRASIL wanted to promote just that face-to-face based learning and growth while maintaining an overall sense of unity and national and international identity.

Products created at one Regional Directorate become part of the INCOSE BRASIL ecosystem, enriching the chapter portfolio and serving as references to be adopted by other Regional Directorates.



Regional directorates



Regional Directorates

Extensions of the National Board of Directors in charge of INCOSE BRASIL's operations in specific geographical regions of interest.

São José dos Campos, SP

São Paulo, SP

São Carlos, SP

Rio de Janeiro, RJ

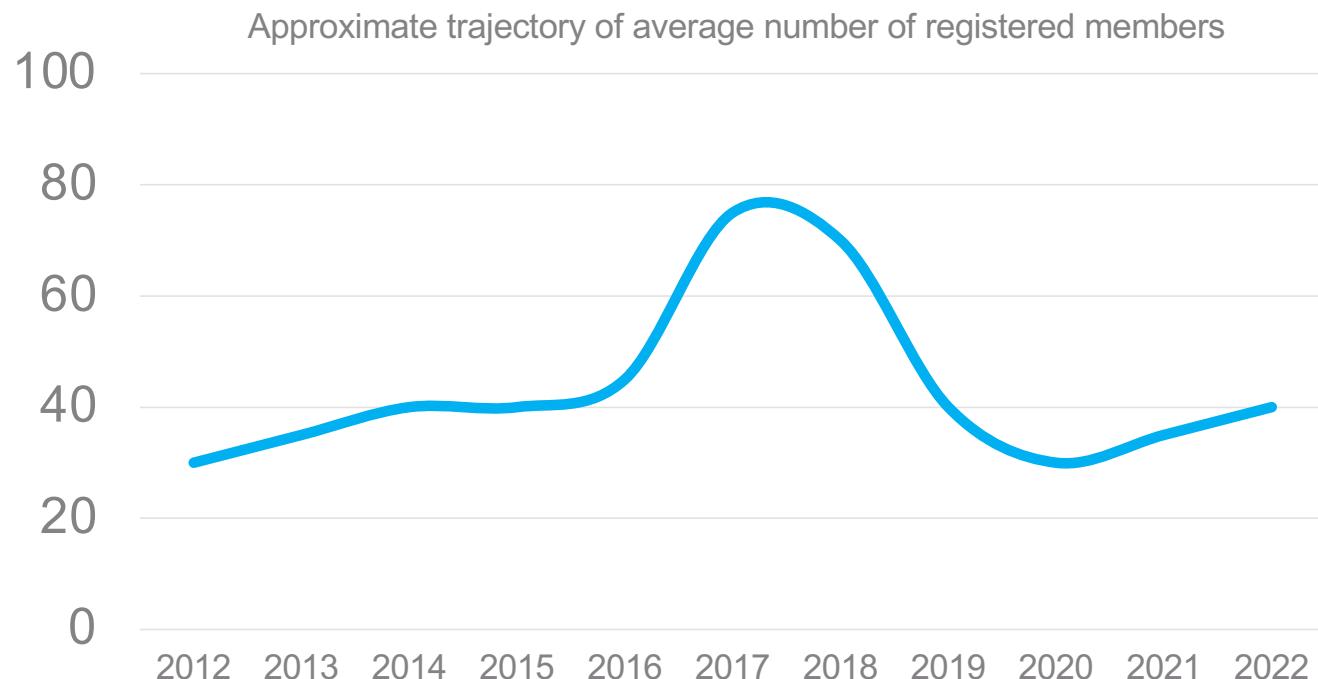
Belo Horizonte, MG

Montes Claros, MG

Goiânia, GO

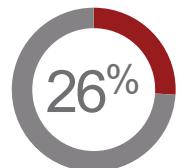


Membership dynamics





Current membership profile

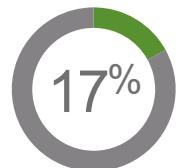


Located outside Brazil

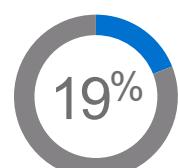
Argentina
Chile
Colombia
Japan
UK
USA



Professionally certified
5 ASEPs
12 CSEPs



Women



Affiliated to INCOSE CAB organizations

1 Colorado State University
7 Embraer
1 Fundação Ezute
1 Keio University
1 Naval Postgraduate School





Summary of chapter performance

Annual INCOSE BRASIL Workshops and National Conferences



Current registered members

+73 associate INCOSE members distributed amongst 10 companies

Online resources

16 Live Sessions
14 System Talks
7 Webinars
8 SE Handbook webinars

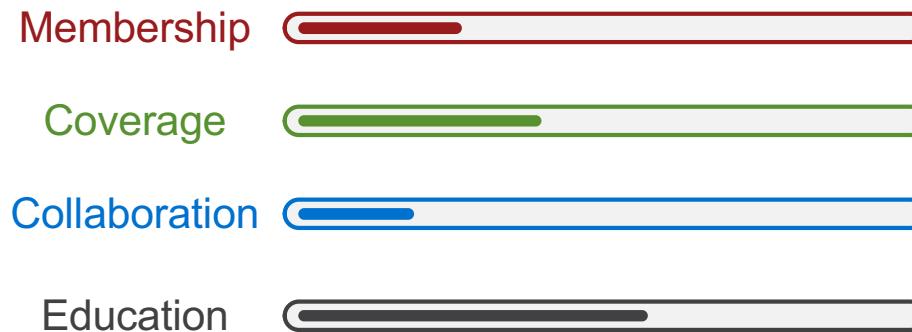
LinkedIn connections

1.177 followers
704 in discussion group





Vision for the future



Grow membership base. Expand geographical coverage in Brazil. Strengthen regional directorates in collaboration with industry, academy and government. Launch the Advisory Council. Help lead the ongoing national engineering education reform.



32nd Annual **INCOSE**
international symposium

hybrid event

Detroit, MI, USA
June 25 - 30, 2022

www.incos.org/symp2022