

APPENDIX: MAIN HAP PROJECTS.

Project	Organizations	Main data	Situation	Resources (US\$ Mi)	Image
Helios (ERAST)	AeroVironment, NASA (US)	Airplane Wingspan = 75 m Weight = 1,300 kg	1994: Start 2001: Flight (29 km) 2003: Accident 2004: Terminated	50 (Until 2000) 300 (Prediction)	
HiSentinel80	SwRI, Raven/Aerostar (US)	Airship Length = 61 m Payload = 36 kg	1996: Start 2010: Flight 2012: Terminated	Not available	
SPF Airship	JAXA (Japan)	Airship Length = 245 m Weight = 32,400 kg	1998: Start 2004: Flight (SPF-2) 2005: Terminated	200 (Until 2005) (Includes Hangar)	
Stratospheric Airship	KARI (South Korea)	Airship - VIA 200: Length = 200 m Weight = 21,726 kg	2000: Start 2003: Flight (VIA 50) 2005: Terminated	Not available	
Zephyr	QinetiQ, Airbus (UK, France)	Airplane - Zephyr 7: Wingspan = 23 m Weight = 55 kg	2001: Start 2010: Flight (Zephyr7) 2016: Ongoing	Not available	
HALE-D	Lockheed Martin, US Army (US)	Airship Length = 73 m Weight = 1,360 kg	2002: Start 2011: Accident 2011: Terminated	36	
ISIS	Lockheed Martin, USAF, DARPA (US)	Airship Length = 305 m Weight = 152,860 kg	2004: Start 2015: Terminated	471 (Until 2012) (Includes Radar)	
SolarEagle (Vulture)	Boeing, DARPA (US)	Airplane Wingspan = 122 m Payload = 454 kg	2008: Start 2012: Terminated	89 (Contract)	
Stratobus	Thales Alenia Space (France)	Airship Length = 100 m Payload = 250 kg	2010: Start 2016: Ongoing	19 (Key Technolog.)	
Loon	Google (US)	Balloon Diameter = 15 m	2012: Start 2013: Flight 2016: Ongoing	Not available	
Solara 50	Titan Aerospace, Google (US)	Airplane Wingspan = 50 m Weight = 159 kg	2013: Start 2015: Accident 2016: Ongoing	Not available	
Aquila	Ascenta, Facebook (UK, US)	Airplane Wingspan = 42 m Weight = 400 kg	2013: Start 2014: Flight (model) 2016: Ongoing	Not available	

1. Departamento de Ciência e Tecnologia Aeroespacial – Instituto de Aeronáutica e Espaço – Subdiretoria de Aeronáutica – São José dos Campos/SP – Brazil. 2. Departamento de Ciência e Tecnologia Aeroespacial – Instituto Tecnológico de Aeronáutica – Divisão de Engenharia Mecânica – São José dos Campos/SP – Brazil. 3. Departamento de Ciência e Tecnologia Aeroespacial – Instituto de Aeronáutica e Espaço – Divisão de Materiais – São José dos Campos/SP – Brazil. 4. Universidade da Beira Interior – Faculdade de Engenharia – Departamento de Engenharia Eletrônica – Covilhã – Portugal.