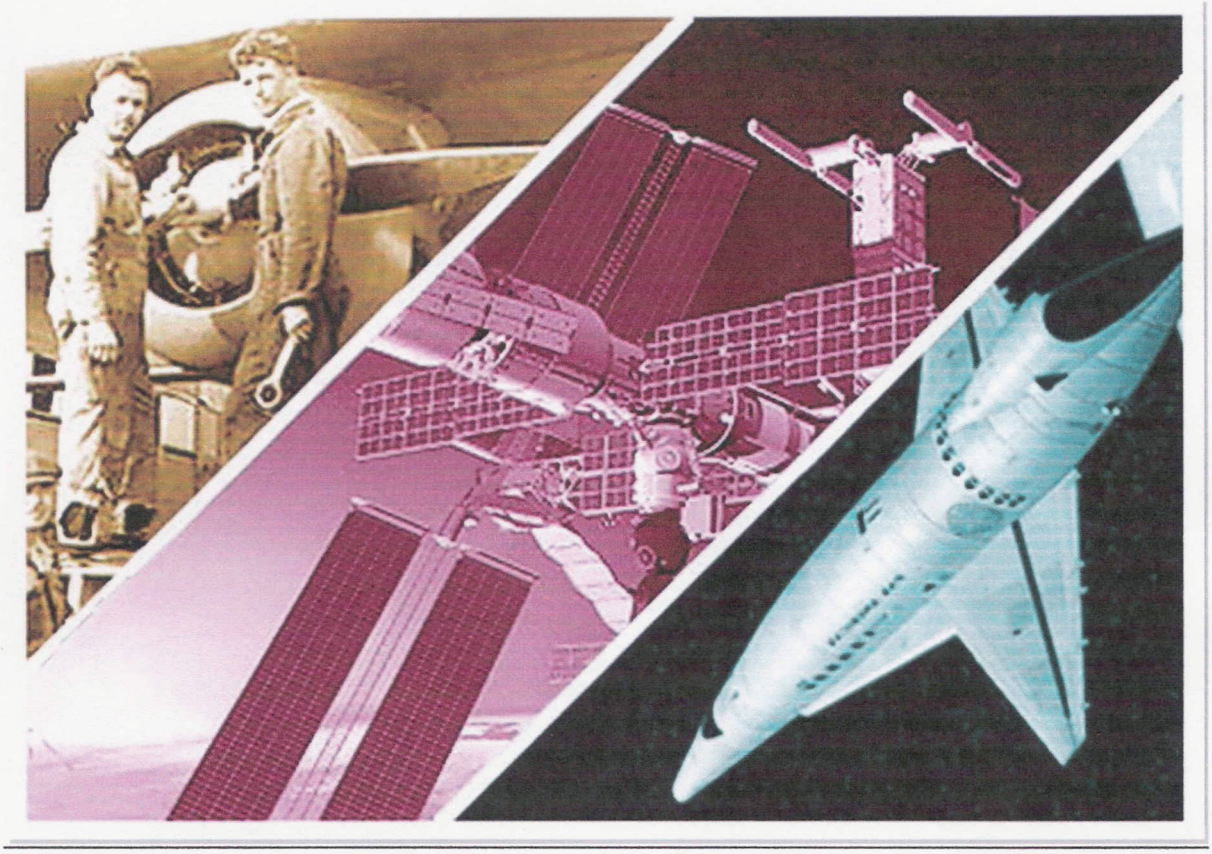
International Association for the Advancement of Space Safety

IAASS STRATEGIC PLAN 2010-2014

(Ref.: IAASS-GEN-PLN-10-005, Issue 1.0)



		Signature	Date
Author(s):	Alex Soons *Executive Director*		01-10-2010
Authorized by:	Tommaso Sgobba *President*		01-10-2010

IAASS is a non-profit organization registered under 28101073 at the Chamber of Commerce in Leiden (NL)

IAASS
P.O.Box 127
2200 AC Noordwijk
The Netherlands

www.iaass.org
spacesafety@iaass.org

REVISION RECORD

Date	Issue	Section	Description	DCR
Sept 2010	Issue 1.0	All	First Issue 1.0 of new document	

TABLE of CONTENT

1. INTRODUCTION of the IAASS

The International Association for the Advancement of Space Safety (IAASS), legally established on 16 April 2004 in The Netherlands, is a non-profit organization dedicated to the furthering of international cooperation and scientific advancement in the field of safety of space systems and missions.

Pursuant to the Association's Charter, the IAASS membership is open to anyone having a professional interest in space safety. Members can be individual persons, corporations, agencies, universities, institutions and other professional associations.

2. SUMMARY SAFETY STATUS of SPACE MISSIONS

Safety of space missions refers to the safety of the general public (on ground, in the air and at sea), launch range personnel, and people on board the spacecraft.
Space safety also encompasses the safeguard of valuable assets such as ground facilities (e.g., launch pads), space systems on orbit (e.g., space station, telecommunications satellites, etc.) and the safeguard of the space, air and ground environment.

Since the beginning of human spaceflight 22 astronauts and cosmonauts have lost their lives, which is about 4% of the total number of people who have traveled to space.
To date, nearly 200 people have been killed by rocket explosions during ground processing, launch preparations and launch. Out of those accidents, 35 casualties were counted just at the beginning of the 21st century!

In the last 10 years there have been at least six launches that were terminated by the launch range safety officer to prevent risk to the public. In addition, there have been several more cases of launchers which did not make it to orbit or did not reach the intended one.

As a matter of fact, public risk criteria do not exist, and the actual distribution of risks posed to the general public on Earth are not well known for the following reasons:

1. Only some space faring countries have published their launch and re-entries risk acceptance criteria and risk mitigation measures.
2. Waivers for non-compliances with launch/re-entry safety requirements, when granted, are treated as confidential.
3. Risk assessments (when performed) are often on a launch-by-launch (or re-entry-by-re-entry) basis and sometimes with limited or no consideration for previous launches/re-entries or planned launches/re-entries worldwide.

There is no agency – national or international – that is responsible for systematically monitoring and controlling the cumulative risk posed to over-flown populations by launch and re-entry operations. A foreign city may be placed at risk by launches from multiple launch sites without the launching nations and concerned parties performing a coordinated effort to assure that the risk levels remain acceptable.

Although there are some coordination efforts between space and air safety authorities worldwide in this regard, they do not appear systematic or comprehensive.

Furthermore, debris generated during uncontrolled or off-nominal re-entries could cause casualties in the air, as well as at sea, which are generally not taken into account in the risk assessment models. The Space Shuttle Columbia accident posed a serious local risk to aviation due to falling debris. The risk was estimated to be in the order of 1/1000 for commercial airlines and 1/100 for general aviation. After the Columbia accident new emergency procedures for the airspace in the USA have been put in place in coordination with the FAA, but more can and should be done in terms of assessing and mitigating risks involving space vehicles and aircraft worldwide.

Environmental accidents such as failures leading to dispersal of radioactive material also have occurred. As of April 2010, there have been 10 such cases, including the plutonium payload on-board the Apollo 13 lunar module, jettisoned at re-entry, which ended up in the Pacific Ocean close to the coast of New Zealand, or the 68 pounds of uranium-235 from the Russian Cosmos 954 satellite which were spread over Canada's Northwest Territories in 1978. The most recent accident of this kind was in 1996, when the Russian MARS96 disintegrated over Chile, releasing its plutonium payload, which has never been found.

There have been also several instances of severe ground chemical contamination. A Russian launcher failure in September 2007 contaminated a vast swath of agricultural land with 200 metric tons of toxic fuel. Today, launchers release more ozone depleting substances in the stratosphere than the entire annual use of CFC-based medical inhalers once in use and now banned by the *Montreal Protocol*.

Another factor affecting safety and sustainability is debris left in space. Currently, there are about 800 operating satellites. However, there are over 30,000 tracked debris objects, approximately 8 cm in size and larger and millions of hazardous bits of debris too small to monitor. Orbital debris includes "dead" satellites, launcher upper stages, pieces of metal, blobs of liquid metal coolant that leaked from discarded space reactors, debris resulting from satellite explosions, optical lens covers, paint flakes, etc. Some of this material will remain in Earth orbit for hundreds or thousands of years and constitute a potential hazard for operational spacecraft and space travelers because of the high relative velocities at impact. Because there is no specific international legal obligation to ensure that spacecraft are properly disposed off at the end of their useful life, many spacecraft operators do not safely dispose of their satellites at the end of the useful lives (e.g. by de-orbiting). The latest example of such danger is the accident that occurred on 10th February 2009 when a defunct Cosmos-2251 satellite and an active commercial Iridium-33 satellite collided in space at an altitude of about 800 kilometers.

Finally, the expanding human space-faring community (including China, next India and perhaps one day Europe and Japan), as well as the on-going developments in the field of commercial human spaceflight raise the issue of establishing international safety standards, and in particular, systems interoperability standards, to allow mutual aid in case of emergencies during ascent/descent, on-orbit, and on extraterrestrial bodies.

As inherently hazardous high-tech developments go, the space industry generally has a commendable safety record, but clearly much more could and should be done. The agenda of action provided in this strategic plan sets forth the specific steps to be taken.

3. The IAASS MANIFESTO for a SAFE and SUSTAINABLE OUTER SPACE

In order to sustain the safety record of the past into an era of less government sponsorship, the International Association for the Advancement of Space Safety (IAASS) expressed in 2009, serious concern about the continued safety and sustainability of civil and commercial space activities and calls upon all nations to actively cooperate with determination and goodwill to enhance access to and promote the safe use of outer space for the benefit of present and future human generations by committing to:

I) *Provide an equivalent minimum level of protection for the citizens of all nations from the risks posed by launching, over-flying, and re-entering of space systems;*

II) *Facilitate that the development, building and operation of space systems be carried out in accord with common ground and flight safety rules, procedures and standards based on the status of knowledge and the accumulated experience of all space-faring nations. To that end the Association seeks to facilitate the sharing of design and operational information on space systems in the form of lessons learned for the purpose of enhancing safety;*

III) *Seek to harmonize and/or establish common international traffic control rules used by launching nations for launch, on-orbit and re-entry operations to prevent collisions or interference with other space systems and with air traffic;*

IV) *Collaborate to protect the ground, sea, air and space environments from chemical, radioactive and debris contamination caused by space operations;*

V) *Avoid intentional destruction of any on-orbit space system or other harmful activities that pose safety and environmental risks; and*

VI) *Establish provisions for the mutual aid for space mission emergencies.*

4. VISION, MISSION, GOALS and OBJECTIVES

4.1. VISION OF THE IAASS

General public tolerance to accidents varies from system to system (and changes with time). The risk of car accidents is about 1 in 5000 departures. The risk in civil aviation is 1 in 2-3 millions departures. Although the aviation safety record is quite impressive compared to other transportation means, the aviation regulatory bodies launched an initiative in 2001 to achieve an accident rate of 1 in 10 million or better. The reason was that the projected traffic increase in the next decades would lead to an increase in the (absolute) number of accidents per year, which would negatively influence the general public perception of air safety and in turn could impact further industry growth.

The level of risk of very complex space systems as the Space Shuttle is embedded in the architecture and operations concept originally selected, as well as in the available technologies. One accident in 100 flights is somehow "built-in" and may possibly be improved only marginally. Would the Space Shuttle have flown at a rate comparable to the initially foreseen one, the entire fleet would have been wiped-out since long.

Pioneers of space tourism publicly state that their craft must be *"100 times safer"* compared with current space systems. However, while they concede that sub-orbital flights are orders of magnitude less complex, they seem eventually to count on public risk acceptance levels that are comparable to the early times of aviation. Unfortunately, time and (safety) culture is much different nowadays. No matter how encompassing the responsibilities and requirements will be of the laws currently under discussion by US lawmakers, the industry may not survive more than a couple of early accidents.
In any case, there is very little or no public tolerance to failures which are within the reach of current knowledge and technologies, but caused by economic pressure or by lack of suitable management/regulatory attention.

It can be concluded that the space industry is expanding rapidly worldwide, but with this expansion the safety risks are also increasing quickly due to the following reasons:

1. Inconsistent safety oversight at international level.
2. Lack of significant technical progress in space safety.
3. Weak or non-existent internationally accepted safety regulations and standards.

THE IAASS HAS THE VISION TO WORK AS AN INDEPENDENT ASSOCIATION OF EXPERIENCED SPACE SAFETY PROFESSIONALS FOR THE COMMON GOAL OF PROMULGATING GOOD SAFETY PRACTICES, HARMONIZING SPACE SAFETY REGULATIONS AND STANDARDS AT THE INTERNATIONAL LEVEL AND SUSTAINING THE INTRINSIC VALUE OF THE SAFE USE OF SPACE

4.2. MISSION OF THE IAASS

In pursuing the vision of the IAASS, the Association aims to promote an international culture of space safety (technical, organizational, socio-political, and regulatory), which would contribute to making space missions, vehicles, stations, extraterrestrial habitats, equipment and payloads substantially safer for the general public, ground personnel and crews. The reasons for pursuing this vision are that:

- safety technologies and risk mitigation techniques have not substantially progressed since the early times of space.

- it is evident that each space accident draws worldwide attention and has a tremendous synergetic impact on the overall progress of spaceflight due to calendar delays, draw on resources, and loss of political support for new endeavors.

- considering that international cooperation in large civil space programs is the way ahead and will become more and more important in future, it is evident that internationally accepted safety regulations and standards will contribute to an efficient and cost effective implementation of such programs.

- there are several issues in space projects related to management of public safety risk which are at the same time national and international in scope. Failures during launch and re-entry phases represent a safety risk to local as well foreign populations due to: high stored energy, debris trajectories, use of radioactive power generation sources (deep-space missions), usage of toxic propellants, etc.

- the development of space-based safety critical services (e.g., air traffic control) which are international by nature and will also precipitate the establishment of international rules for the protection of such on-orbit assets.

- internationally consistent safety regulations and standards are also an important contributing factor to prevent unfair economic competition and thus will contribute to the growth of commercial space activities, including commercial human spaceflight endeavors.

- finally, no economic or political consideration justifies constraining the international circulation of safety crucial and possibly life-saving information.

Based on above considerations, the IAASS concludes that:

IT IS THE MISSION OF THE IAASS, TOGETHER WITH ITS MEMBERS AND SPONSORS, TO PROMOTE AN INTERNATIONAL SPACE SAFEY CULTURE BY:

1. **ADVANCING THE APPLICATION OF SPACE SAFETY TECHNIQUES AND DESSIMINATING SPACE SAFETY SCIENCE INFORMATION BY PROMOTING COMMUNICATION AND COOPERATION BETWEEN INTERESTED GROUPS AND INDIVIDUALS;**
2. **PROMOTING AND IMPROVING THE TRAINING OF SPACE SAFETY PROFESSIONALS;**
3. **ADVOCATING THE ESTABLISHMENT OF CONSISTENT SPACE SAFETY LAWS, REGULATIONS AND STANDARDS AT NATIONAL AND INTERNATIONAL LEVELS FOR THE SUSTAINABLE CIVIL/COMMERCIAL USE OF SPACE;**

In particular, the IAASS carries out and provides expertise, consultation and education on state of the art methods and processes that promote space safety.

4.3. GOALS AND OBJECTIVES OF THE IAASS

In pursuing its goals and objectives, the IAASS with its members and sponsors aims to undertake the following activities:

GOAL # 1.1

PROMOTE THE ADVANCEMENT OF THE SPACE SAFETY SCIENCES AND TECHNOLOGIES IN THE VARIOUS DISCIPLINES BY DEDICATED RESEARCH AND DEVELOPMENT ACTIVITIES.

- establish a sponsor community, including the dedicated "International Space Safety Foundation", for the funding of space safety research and development activities;
- motivate universities and institutes to perform space safety research and development in their own organizations in association with the IAASS;
- invite ideas and proposals for space safety research for the establishment of a plan of activities;
- perform independent space safety studies on behalf of corporate and institutional members;

GOAL # 1.2

DISSEMINATE SPACE SAFETY SCIENCE AND TECHNOLOGY INFORMATION AND PROMOTE THE COMMUNICATION AND COOPERATION BETWEEN INTERESTED GROUPS AND INDIVIDUALS.

- organize space safety conferences and seminars at regular intervals;
- facilitate the exchange of space safety information among the members of the Association, the space safety community of experts and with the general public through networking, a regular newsletter and a dedicated website;
- establish and maintain a searchable database of published information in the field of space safety;
- develop and disseminate tools and educational publications concerning space safety;
- honor professionals who made outstanding contributions or improvements to space safety;

GOAL #2

EDUCATE SPACE SAFETY SCIENCES AND TECHNOLOGIES AT PROFESSIONAL LEVEL AND APPLY THESE IN SPACE PROGRAMS.
PROMOTE A PROGRAM MANAGEMENT CULTURE THAT PUTS SAFETY TARGETS AHEAD OF MISSION OBJECTIVES FROM THE EARLY STAGES OF CONCEPTUAL DESIGN, TO ACHIEVE RISK LEVELS REPRESENTING A SUBSTANTIAL IMPROVEMENT ON PREVIOUS GENERATIONS VEHICLES AND CONTINUOUSLY IMPROVE ON PREVIOUS ACHIEVEMENTS.

- offer world-class space safety educational and training programs and tools;
- establish a clearinghouse for the review of documented space safety courses and other related publications;
- arrange the development of an IAASS virtual "Space Safety Academy";
- offer/advertise selected consultancies from (retired) members;

GOAL # 3.1

PROMOTE AN INTERNATIONAL CULTURE OF SPACE SAFETY.
COMPARE AND JUDGE IDEAS AND EXPERIENCES FOR THEIR UNIQUE TECHNICAL VALUE, AND ELABORATED THEM FURTHER TO ACHIEVE CONSENSUS IN THE FORM OF STANDARDS AND RECOMMENDED PRACTICES.

- Establish (or participate to) working groups for the development of international space safety standards and recommended practices;

GOAL # 3.2

ADVOCATE AN INTERNATIONALLY CONSISTENT REGULATORY FRAMEWORK OF CHECKS-AND-BALANCES FOR CIVIL HUMAN SPACEFLIGHT, INCLUDING THE RESPONSIBILITY/ACCOUNTABILITY FOR PREVENTABLE SPACE ACCIDENTS.

MONITOR AND STUDY THE SPACE PROGRAMS WITH REFERENCE TO PUBLIC SAFETY TO ENSURE THAT A POSITIVE SAFETY RECORD IS REACHED AND MAINTAINED WORLD-WIDE. PROMOTE INTERNATIONAL REGULATIONS AND STANDARDS TO ENSURE UNIFORM SAFETY CERTIFICATION PROCESSES AND THEIR NATIONAL IMPLEMENTATION, WHERE NECESSARY.

- advocate the establishment of an international framework for space safety;

5. ORGANIZATION of the IAASS

For the implementation of the vision, mission, goals and objectives of the Association as defined herein, the IAASS is organized and composed of the following constituent bodies and committees:

5.1. THE IAASS BOARD

The IAASS Board is appointed by the General Assembly of the Association and may comprise up to 30 persons. The meetings of the Board are chaired by the President.

The Board is authorized to exercise supervision over and to provide direction to the activities and the management operations of the Association, in order to ensure that the organization accomplishes its statutory mission and goals.

5.2. THE IAASS EXECUTIVE COMMITTEE

The Executive Committee is elected by the General Assembly of the Association and is responsible for the management of the IAASS. In particular, the Executive Committee is responsible for ensuring that the Association's program of activities is implemented within the budgetary appropriations approved for this purpose, for managing the activities of the Standing Committees and for exercising supervision over the activities of the Technical Director and the Technical Committees;

Persons in charge of the following functions are, by their position, Member of the Executive Committee:

- President
- Treasurer
- Secretary
- Executive Director
- Technical Director
- Chairs of the Standing Committees

5.3. STANDING COMMITTEES

The Standing Committees of the Association report to the Executive Committee of the IAASS and are responsible for the following tasks:

- Academic Committee

  It is the task of the Academic Committee to pursue all matters related to the coordination of the efforts and objectives of the IAASS within the worldwide academic community, in particular with regard to the offering of space safety courses by universities, the undertaking of research studies by universities,

institutes, consulting firms and/or industries who are academic partners to university research institutes, all of whom would have special expertise in the area of space safety. Finally the Committee facilitates various publications in this field;

- Conference Planning Committee

  It is the task of the Conference Planning Committee to organize a Space Safety Conference and/or Seminars at regular intervals, in particular with regard to the preparation of a planning for all preparatory activities, engagement of a Local Organizing Committee and of a Conference Program Committee, distribution of conference/seminar information, selection of the premises and facilities for the event, dissemination of calls for papers, review of the abstracts received and invitation of the selected speakers, publication and distribution of the conference/seminar proceedings;

- Information & Communications Committee

  It is the task of the Information & Communications Committee to arrange effective public relations, internal and external communications and media relations, in particular with regard to IAASS supported events such as the Space Safety Conferences and Seminars and with regard to the management of the IAASS website, in order to develop and maintain a top ranking public image for the Association;

- Membership Committee

  It is the task of the Membership Committee to manage all aspects related to membership applications and maintenance of membership of the Association, in particular with regard to maintaining and updating the membership classification structure for personal members and corporate sponsors, organizing the review of membership applications, establishing the membership fee structure, keeping the central membership database current and arranging the IAASS membership marketing and promotion;

- Technical Training Committee

  It is the task of the Technical Training Committee to manage training in all matters concerning space safety, in particular with regard to arranging with professional institutes, companies and specialists the offering of courses in the area of space safety, identifying the need for new space safety courses and encouraging their development and the development of an IAASS virtual "Space Safety Academy", which may also contain any IAASS web-based courses;

- Safety Awards Committee

  It is the task of the Safety Awards Committee to honor professionals that have made a major contribution to the worldwide advancement of space safety, in particular with regard to the **Space Safety Pioneer Award-Jerome Lederer** for professionals who made outstanding contributions or improvements to space safety and the **Safety by Design Award-Vladimir Syromiatnikov** for outstanding designers and engineers who have made major technical contributions towards systems safety;

- Young Professionals Committee

  It is the task of the Young Professionals Committee to increase the awareness of space safety among young professionals and to contribute to the implementation of the IAASS strategic plan by encouraging active participation and engagement of young professionals. The Committee will encourage career development and it will work with other Committees to this end. This committee will pursue active communication with IAASS young professionals and work to promote networking opportunities.

5.4. TECHNICAL COMMITTEES

Technical Committees are formed to create a strong link between professionals in the various space safety disciplines from agencies, industry, institutes and academia, in order to advance the technical knowledge and expertise in the field, to carry out independent studies and research and to provide professional consultancies. The following Technical Committees have been established:

- Space Systems Safety Committee

  It is the purpose of the Space Systems Safety Committee, to achieve that safety design and engineering becomes an integral part of design and development processes for from start to finish of new space systems. The committee will be looking into the integration of various key elements and innovative concepts of safety, that are common to different space system developments. These range from integrated system safety engineering up to verification techniques and to organizational cultural development issues. In particular, the Committee will consider such issues as integration of safety into system engineering, safety-centered system design methods and metrics, human factors for safety and operations safety, safety program planning (in particular for international programs), organizational safety culture and capability metrics, safety analyses techniques, safety critical systems realization and operation (including safety critical S/W and QA). Furthermore, the Committee shall publish periodic reports and position papers and evaluate, document and recommend system safety requirements, guidelines, best practices and standards, promoting the safe design and operation of space systems;

- Launch Range Safety Committee

  It is the purpose of the Launch Range Safety Committee is to develop international consensus for common risk management practices associated with launch range safety and to share information on methods used in the international community which aide in establishing launch range safety, in particular with regard to the development, documentation and maintenance of common safety standards that provide a stable and efficient framework for the international space launch industry, the promotion of consistency and technical rigor in the substance and application of common safety standards, the review of international launch safety standards and the exchange of data relevant to a common safety standard;

- Space Debris & Re-entry Safety Committee

  It is the purpose of the Space Debris & Re-entry Safety Committee to evaluate current directions in mitigating and removing space debris, predicting the hazards to manned and unmanned space and launch systems posed by space debris and to foster efforts and proposals for reducing these hazards. The Committee also focuses on reentry into the atmosphere as a disposal technique for space hardware at end of life and on methods for predicting the survivability of and hazards posed by debris from reentering hardware, including hazards posed by reentry of spacecraft containing materials that may be hazardous to humans or the environment. Furthermore, the Committee shall publish periodic reports and position papers and evaluate, document and recommend requirements, guidelines, and techniques to mitigate the future hazards caused by space debris and re-entry of space hardware;

- Space Exploration Safety Committee

  It is the purpose of the Space Exploration Safety Committee to evaluate the current directions in human space exploration within and beyond the immediate vicinity of the Earth, in particular with regard to the safety implications related to hardware designs and operational concepts, on identifying those hazards to humans and on envisaged efforts and proposals for reducing these hazards. Where the hazards cannot be reduced or mitigated, then recommendations will be made for the reduction or mitigation of the effects of these hazards. Furthermore, the Committee shall publish periodic reports and position papers and evaluate, document and recommend requirements, guidelines, and practices promoting the safe design and operation of spaceflight vehicles designed, developed, built, and operated in support of human space exploration;

- Human Factors & Performance for Safety Technical Committee

  It is the purpose of the Human Factors & Performance for Safety Technical Committee to develop strategies for optimizing team performance and minimize the propensity for safety critical errors with regard to flight crews, ground processing and mission control teams, engineers and managers throughout the entire lifecycle of space flight programs. Developing the most effective human factors training for space flight crews and mission control personnel, identifying vulnerabilities and improving the organizational safety culture, providing effective collaboration techniques during critical decision making and continued study of psycho-social and cultural factors related to long-duration space missions are also areas of particular interest. Furthermore, the Committee shall publish periodic reports and position papers and evaluate, document and recommend requirements, guidelines, and practices with regard to human factors and performance;

- Space Safety Legal & Regulatory Committee

  It is the purpose of the Space Safety Legal & Regulatory Committee to support the IAASS as a whole and its relevant bodies in translating the technical work into legal and regulatory approaches. In this context, the mandate of the Committee is to promote, advocate and help develop, in a neutral and objective manner, international regulatory framework comprising common space safety laws, rules, standards, and regulatory procedures and their effective and efficient implementation and the creation of regulatory bodies and systems at national and international levels. This mandate shall be carried out for the purpose of ensuring concrete benefits for the mitigation of risks and hazards, reducing administrative burdens and encouraging space activities by the public and the private sectors for the benefit of all.

Additional Technical Committees might be established for safety critical areas such as Space Transportation, Nuclear Safety and Near Earth Objects.

6. The INTERNATIONAL SPACE SAFETY FOUNDATION

Although the IAASS is the premiere and sole professional association worldwide in the field of space safety, it operates in a highly specialized field and its membership is destined to be limited to a few hundred highly knowledgeable individuals. As a consequence of such a limitation and in consideration of its worldwide scope, most of its operations and programs rely on limited resources provided by voluntarism and sponsorships.

In order to complement these limited resources, the International Space Safety Foundation (ISSF) was created to work on a cooperative basis with the IAASS to further the cause of space safety in the U.S. and globally.

The International Space Safety Foundation (ISSF) is dedicated to the promotion of space safety, through sponsoring of research and development activities, development of space safety standards and compliance certification services, promotion of academic and training programs, motivational campaigns including recognition of outstanding contributions to the space safety field, and assistance to young people and professionals to acquire or further develop the necessary knowledge. This involves maintaining active liaison with space agencies, corporations, professional societies, and individuals in the space safety field, as well developing effective communications.

The IAASS and ISSF work on common goals and objectives, and cooperate to conduct research, promote training, education and relevant literature in the field and to support conferences, workshops and awards in the field of space safety. In particular, it is envisaged that the Foundation will seek the support of the Technical Committees of the IAASS for establishing multi-years research and development plans, In addition, the Foundation will work with the IAASS and those involved in space safety around the world, to sponsor the development of the best and most current academic and training courses in the space safety field.

7. MEMBERSHIP and FINANCIAL RESOURCES

7.1. MEMBERSHIP AND DUES INCOME (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Members	87	136	151	171	190	210	215	230
Paying Members	79	64	70	39	142	157	161	172
Dues	3565	2917	3230	1775	6234	7087	7256	7740

7.2. REVENUE FROM TECHNICAL TRAINING PROGRAM (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Courses	10,517	20,045	7008	25,144	25,000	30,000	35,000	40,000

7.3. REVENUE FROM CONFERENCE PROGRAM (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Conferences	30,977	12,631	102,925	0	15,000	50,000	0	25,000

7.4. REVENUE FROM PUBLICATIONS AND STUDIES (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Books	-	-	-	-7471	2000	3000	5000	7,000

7.5. EXPENSES (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Expenses	15,146	30,599	35,135	33,801	37,050	40,000	35,000	42,500

7.6. RESULT (€)

	Actual				Evolution			
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Result	29,913	4994	78,028	-14,353	11184	50087	12256	37240