I. BACKGROUND

1. The Informal Working Group on default remedies in relation to components (hereinafter referred to as the Informal Working Group) was established at the third session of the UNIDROIT Committee of governmental experts for the preparation of a draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets (hereinafter referred to as the Committee), held in Rome from 7 to 11 December 2009. It was given the task of finding a solution to a problem which, in essence, came down to the most appropriate way of resolving those conflicts that might arise at the level of the exercise of default remedies where the action of the holder of an international interest in one space asset might adversely affect the international interest held by another creditor in a space asset physically linked to that asset, conflicts typically likely to arise in respect of components of a satellite, such as transponders. The remit of the Informal Working Group was delimited by reference to the definition of the term “space asset” as this related to components and the related question of default remedies in relation to components.  

2. Following meetings of the Informal Working Group held during the third and fourth sessions of the Committee, the latter, at the conclusion of its fourth session, held in Rome from 3 to 7 May 2010, decided that an intersessional meeting of the Informal Working Group should be held prior to the holding of the fifth session of the Committee, to be held in Rome from 21 to 25 February 2011, with a view to advancing the work hitherto accomplished by the Informal Working Group.

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1 C.G.E./Space Pr./3/Report rev., § 18. This and all the other documents referred to in this document are available on the UNIDROIT web site, at the following address:
http://www.unidroit.org/english/workprogramme/study072/spaceprotocol/study72l-archive-e.htm#NR2.
II. OPENING OF, PARTICIPATION IN AND DOCUMENTATION FOR THE INFORMAL WORKING GROUP MEETING

(a) Opening and moderation of, and participation in the Informal Working Group meeting

3. The intersessional meeting of the Informal Working Group was held in Rome, at the seat of UNIDROIT, from 19 to 21 October 2010, immediately after the consultations with representatives of the international commercial space and financial communities, held on 18 October 2010 (hereinafter referred to as the consultations), and, in part, at the same time as the meeting of the Informal Working Group on limitations on remedies, held on 20 and 21 October 2010. The Informal Working Group meeting was attended by representatives of the Governments of Canada, the People's Republic of China, the Czech Republic, Germany, Italy, Japan, the Russian Federation, the United Kingdom and the United States of America and observers from Crédit Agricole S.A., the German Space Agency and Thales Alenia Space. Mr J.A. Estrella Faria, Secretary-General of UNIDROIT, acted as moderator and opened the Informal Working Group meeting at 9.50 a.m. on the 19th, recalling that even if, at its last meeting, held during the fourth session of the Committee, no written proposal had emerged regarding the definition of "space asset", significant progress had, nevertheless, been made.

(b) Adoption of the agenda

4. The draft agenda, as prepared by the Secretariat was adopted.

(c) Documentation for the Informal Working Group meeting

5. The text of the revised preliminary draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets prepared by Sir Roy Goode (United Kingdom) and Mr J.M. Deschamps (Canada), as Co-chairmen of the Drafting Committee of the Committee, to reflect the conclusions reached by the Committee at its third session, held in Rome from 7 to 11 December 2009, and reviewed by the Drafting Committee, as amended during the fourth session of the Committee (hereinafter referred to as the revised preliminary draft Protocol as amended) was the basic working document of the meeting. In addition to the draft agenda, the following documentation was submitted to the Informal Working Group meeting:

- Explanatory note on the draft agenda (prepared by the Secretariat);
- Proposals submitted by the Government of Germany;
- Proposal submitted by Mr S. Kozuka (Japan) and
- Comments (submitted by Governments and representatives of the international commercial space and financial communities).
III. DISCUSSION OF THE BUSINESS BEFORE THE INFORMAL WORKING GROUP

(a) Definition of the term “space asset”

(i) Basic proposals and general considerations

6. Two Governments submitted proposals for the definition of “space asset”. Under the first proposal, developed in close consultation with technical experts from the international commercial space and financial communities, the term “space asset” was defined in terms of two separate categories of identifiable space asset, namely a “resource module” - which “constitutes a functional unit that is uniquely identifiable and is clearly distinguishable, in technical terms”, its “function [being] to support and maintain the ‘payload’” - and a “payload” - its function [being] to provide a certain service”. It was envisaged that this definition would work for all types of space asset, notably all types of satellite, space stations, space vehicles and launch vehicles, although a creditor would have to register its interest in the “resource module” and any relevant “payloads” separately. This proposal was referred to as the “physical approach”, focusing as it did on the physical distinctions between the parts of the space asset.

7. Under the second proposal, space assets would be divided up into three distinct categories of identifiable space asset, namely “spacecraft”, “launch vehicle” and “functional component”, with the latter category being sub-divided into two sub-categories, namely “transponder” and “other payload”, permitting both the registration of a space asset as a whole and separate registrations for certain “functional components”. Under this proposal, a mechanism would be established whereby the regulations to be promulgated by the Supervisory Authority of the future International Registry for space assets (hereinafter referred to as the International Registry), could take future technology into account as it developed. This proposal was referred to as the “economic approach”, focusing as it did on the economic functions of space assets.

8. It was noted that, while the two proposals were somewhat different, they both worked towards a definition of “space asset” that was simpler than the one found in the revised preliminary draft Protocol as amended.

9. Two issues that were especially focussed on in the discussions were, first, the case for inclusion in the definition of “space asset” of those high-value parts, such as transponders, which formed part of payloads and, secondly, the importance of registrations also being able to be made in respect of space assets as a whole.

(ii) Case for the inclusion of high-value parts

10. A representative of the international commercial space and financial communities had noted during the consultations that parts of payloads, such as transponders, were becoming increasingly attractive as security for creditors, although the representative of one Government pointed out that security was not taken over the transponders as such but rather over their leasing capacity.

11. The representative of one Government recalled, though, that, given the nature of the registration regimen of the Convention on International Interests in Mobile Equipment (hereinafter referred to as the Convention), such parts would all have to be capable of unique identification, for the purposes of registration and searching in the International Registry. Moreover, since a transponder’s leasing capacity would be treated as a debtor’s right under the revised preliminary draft Protocol as amended, it would be all the more crucial that transponders and payloads be
uniquely identifiable in order to link leasing capacity to the physical asset for the purposes of the Convention. One representative of the international commercial space and financial communities pointed out that parts could be identified by the use of manufacturer’s serial numbers, which could easily be verified against the relevant documentation of any asset or part, since manufacturers were already in the practice of putting serial numbers on all but the smallest of parts and this was true, in particular, of transponders. One representative of the international commercial space and financial communities suggested that, in order uniquely to identify a space asset for the purposes of registration, one could simply refer to the relevant contracts for the manufacturing of the space asset, as very detailed descriptions would be found in such contracts.

12. The question was raised as to how the International Registry would accommodate parts becoming bankable after the adoption of the future draft Space Protocol, and in particular transponders or even parts which might not have been contemplated at the time. The representative of one Government recalled the suggestion of establishing a mechanism whereby the Supervisory Authority of the International Registry could adapt the regulations to take account of such parts as they became bankable.

13. Moreover, it was deduced from the fact that the relevant information relating to the different types of aircraft object featuring on the drop-down list employed by the International Registry for aircraft objects was supplied by the manufacturers of such aircraft objects, who supplied the relevant model designations and serial numbers, that it would simply be a matter for the Supervisory Authority of the International Registry to permit manufacturers to supply the relevant information for those bankable parts which could then appear on the International Registry’s own drop-down list.

(iii) The ability to register space assets as a whole

14. The representative of one Government suggested that, independently of registrations made in respect of specific parts, it would be preferable for space assets as a whole, that is both a “resource module” and its “functional payloads”, also to be capable of registration, so as to avoid the need for the making of multiple registrations in respect of the same asset. It was noted that the fact of a creditor having to make numerous registrations would, moreover, increase the probability of an error in one of the registrations and, therefore, the risk of the international interest in question not being recognised by the Registrar of the International Registry.

15. In the context of the registration of an international interest in a space asset as a whole, it was noted that, whilst a party wishing to register in the International Registry for aircraft objects an international interest in an aircraft, as well as in the aircraft engines installed thereon, had to make separate registrations in respect of the airframe, on the one hand, and the engines, on the other, those registrations could, nevertheless, be grouped together in such a way that only one fee and one confirmation would be required. It was also noted that new technology was being developed to facilitate the registering of an international interest in the aircraft, including the engines, which might be adapted to fit the needs of the International Registry, so as to permit a creditor to make one registration in respect of an interest in a space asset as a whole, including all its payloads.

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(b) Default remedies in relation to components

(i) Divergent trends for dealing with conflicts of interest

16. As in the past, there were two divergent trends on the most appropriate manner of dealing with the sort of conflicts referred to above. 17 One approach was that this was a matter best left to be dealt with by the parties in inter-creditor agreements, 18 the other that a default rule in the planned Protocol was necessary for those cases where the parties did not conclude such agreements. 19

(ii) Basic hypotheses in which conflicts will arise

17. The basic hypothesis in which such a potential conflict might arise would be one where one international interest had been registered in a “resource module”, such as a satellite bus, and another in the “payload” of that module, such as a communications payload. Where, in this hypothesis, the holder of the international interest in the satellite bus sought, by way of remedy, to move the satellite to a new orbit - a remedy of which such a creditor might reasonably expect to be able to avail itself in the event of its debtor's default - the chances were that the international interest held by the creditor of a non-defaulting debtor in the payload would be “adversely affected”. A second hypothesis potentially giving rise to such a conflict would be one where the holder of the international interest in the satellite bus sought, by way of remedy, to alter the region covered by the satellite by repositioning one or more of that satellite’s antennae, with the same probability of adverse consequences for the holder of an international interest held by a creditor of a non-defaulting debtor in a payload dependent on that antenna or those antennae.

18. It was pointed out that such potential conflicts were not amenable to solution under the priority rules of the Convention, as would be conflicts between the holders of senior and junior international interests in the same asset: such conflicts were rather between the holders of equally senior international interests in distinct but physically connected assets.

19. The representative of one Government questioned the meaning of the language “adversely affected” in this context, noting that the economic effect of the creditor’s exercise of its remedies - for example, the diminution in the value of an aeroplane once, pursuant to the exercise of such a remedy, one or more of its engines were removed - would normally be procured entirely lawfully and that, failing the occasioning of physical damage to a third party's property - as, for example, where the engines were improperly removed from the airframe, resulting in a claim in tort - it was difficult to see how the economic effects on a non-defaulting third party of the creditor’s exercise of its default remedies could be unlawful. The representative of another Government, however, noted that the cases of an aeroplane and a satellite were fundamentally different in this respect, in that a payload on board a satellite could not be physically recovered.

20. A representative of the international commercial space and financial communities reported that, given the regulatory obstacles that had to be overcome to operate a satellite and the danger inherent in moving a satellite from one orbit to another, creditors with interests in satellites would almost never move satellites from their original orbits. Another representative of those communities noted that it would be very rare for a party to have an interest in a satellite bus and not in the payloads carried thereon, the payloads being the primary revenue-generating element of the satellite. They concurred that the question under discussion concerned only a very small percentage of modern satellite financings, while noting that practice in this area might, nevertheless, change in future.

17 Cf. § 1, supra.
18 Cf. Appendix VI to the present report, pp. ii and iii.
19 Cf. Appendix IV to the present report, pp. v and vi.
(iii) Proposals for dealing with conflicts

21. While the representative of one Government reiterated the view that the question of conflicts of interest would be dealt with, as a matter of routine, by the parties in inter-creditor agreements, a representative of the international commercial space and financial communities stressed, given the importance of the law applicable to such agreements, how important it would be for a default rule to be laid down in the planned Protocol for those cases in which the parties failed to make the necessary provision.

22. However, the representative of one Government took the view that it would be difficult to draft a default rule that would work in all cases, that could be justified as an improvement over all other applicable rules and laws in every situation for all parties and that might lead courts to construe strictly any contractual deviation from a default rule devised by the parties. His Authorities were also against the idea of granting one party a negotiating power on such matters that it did not at present have. On the other hand, the representatives of some Governments indicated their support for the argument in favour of the inclusion of such a default rule in the planned Protocol, especially if the application of such a default rule were to be limited to cases where the parties had not made an inter-creditor agreement on the subject.

IV. CONCLUSIONS OF THE INFORMAL WORKING GROUP

(a) Definition of the term “space asset”

23. It was agreed that both payloads and parts thereof, such as transponders, should be covered in the definition of “space asset” in such a general way as to provide the Supervisory Authority of the International Registry with the necessary basic guidance for the development, through regulations, of the technical criteria for their identification for registration purposes.

24. In the light of the discussions of the Informal Working Group on this issue, the following proposed new definition of “space asset” emerged:

“Space asset’ means any man-made uniquely identifiable asset in space or intended to be launched into space, and comprising

(i) any spacecraft, that is any satellite, space station, space module, space capsule, space vehicle or other vehicle designed to operate in space, or a reusable launch vehicle, whether or not including a space asset falling within (ii) or (iii) below;

(ii) any payload (whether telecommunications, navigation, observation, scientific or otherwise) in respect of which a separate registration may be effected in accordance with regulations from time to time made by the Supervisory Authority; or

(iii) any part of a spacecraft or payload such as a transponder [capable of independent use], in respect of which a separate registration may be effected as in (ii) above,

   together with all installed, incorporated or attached accessories, parts and equipment and all data, manuals are records relating thereto.”

25. It was noted that the proposed new definition would permit the registration of a space asset as a whole - and thus permit the making of a single registration in respect, for example, of a whole satellite or another class of space asset - and that it would cover transponders and permit the Supervisory Authority of the International Registry to develop more detailed technical identification criteria for the purposes of the registration of newly bankable assets as these were designated as such by the international commercial space and financial communities. It was suggested that it might be useful to say something about this expanded role for the Supervisory Authority in the
preamble to the future Protocol or in a Resolution to be adopted by the future diplomatic Conference.

26. In response to the query raised by the representative of one Government as to which party’s intention was contemplated in the expression “intended to be launched into space”, it was suggested that it could be clarified by use of the words “intended by the parties to the agreement” (italics added”). The representative of another Government proposed that the expression “designed to operate in space” be clarified by use of the language “designed for use in space”. It was agreed, however, that the proposed new definition of “space asset” provided a useful basis for discussion by the Committee at its fifth session and that such drafting refinements as might be necessary would best be undertaken later.

27. It was agreed that the proposed new definition of “space asset” be included in a footnote to the text of Article I(2)(I) of the revised preliminary draft Protocol as amended to be sent out with the invitations to the fifth session of the Committee. The Informal Working Group recommended that the proposed new definition be taken as the basis for the Committee’s further deliberations on this question and decided that this should be duly reflected in the footnote.

(b) Default remedies in relation to components

28. Given the continuing division of opinion on this issue, it was decided that the default rule proposed by one Government 20 should be tentatively recommended by the Informal Working Group to the Committee at its fifth session as a proposed new Article XVIII (3) and (4), in square brackets, however qualified by the language “where one space asset that is the subject of an international interest becomes physically linked to another space asset that is or may be subject to an international interest of another and both space assets are in space” in additional square brackets and by further language, again in square brackets, making it clear that such a rule was subject to such inter-creditor agreements as might be concluded by the parties.

29. Such a provision would read as follows:

"Article XVIII

[3. [Where one space asset that is the subject of an international interest becomes physically linked to another space asset that is or may be subject to an international interest of another and both space assets are in space] [Except as otherwise provided by the parties in their agreement] The creditor shall only exercise the remedies provided in Chapter III of the Convention against a space asset in which it holds an international interest in so far as this does not [technically] affect the current use of, international interests in, and other rights relating to, other space assets physically linked to the former space asset.

4. Remedies other than those referred to in the preceding paragraph may be exercised against a space asset that is subject to an international interest where

(a) the holder of an international interest in, and other rights relating to, other space assets physically linked to the former space asset consents to the exercise of such remedies to the extent that its international interest or other rights would be impaired, or

[(b) the creditor exercising remedies offsets the impairment of the current use of the physically linked space asset by taking equivalent technical measures.]"

20 Cf. Appendix IV to the present report, pp. v and vi.
30. In response to the request from the representative of one Government for further consultations on this issue with a view better to understanding the concerns of the Government having tabled the proposal at the root of the proposed new Article XVIII(3) and (4), Mr Estrella Faria indicated that the Secretariat would be happy to facilitate such consultations.

V. CLOSING OF THE INFORMAL WORKING GROUP MEETING

31. No other business being raised, Mr Estrella Faria, after thanking all the participants for their contributions to the discussions, declared the Informal Working Group meeting closed at 6 p.m. on 21 October 2010.
APPENDIX I

LIST OF PARTICIPANTS

STATES

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AGENDA

1. Adoption of the agenda

2. Organisation of work

3. Continuation of consideration of the most appropriate way of resolving those conflicts that may arise at the level of the exercise of default remedies under the Convention on International Interests in Mobile Equipment as intended to apply, through the planned Protocol thereto on Matters specific to Space Assets, to space assets in cases where the action of the holder of an international interest in one space asset might otherwise adversely affect the international interest held by another creditor in a space asset physically linked to that asset, in particular in the light of the revised preliminary draft Protocol on Matters specific to Space Assets as it emerged from the fourth session of the Committee of governmental experts (C.G.E./Space Pr./4/Report, Appendix VIII) and the report on the work accomplished by the Informal Working Group during that session (C.G.E./Space Pr./4/Report, § 145)

4. Any other business.
APPENDIX III

EXPLANATORY NOTE ON THE DRAFT AGENDA

(prepared by the UNIDROIT Secretariat)

I. INTRODUCTION

(a) Remit of the Informal Working Group on default remedies in relation to components

1. The Informal Working Group on default remedies in relation to components (hereinafter referred to as the Informal Working Group) was established at the third session of the Committee, held in Rome from 7 to 11 December 2009. It was given the task of finding a solution to a problem which, in its essence, comes down to the most appropriate way of resolving those conflicts that may arise at the level of the exercise of default remedies where the action of the holder of an international interest in one space asset might otherwise adversely affect the international interest held by another creditor in a space asset physically linked to that asset, conflicts typically likely to arise in respect of components of a satellite, such as transponders. The remit of the Informal Working Group was delimited by reference to the definition of space assets as this related to components and the related question of default remedies in relation to components. 21

(b) Organisation of, and participation in the intersessional meeting of the Informal Working Group

2. Following meetings of the Informal Working Group held during the third and fourth sessions of the UNIDROIT Committee of governmental experts for the preparation of a draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets (hereinafter referred to as the Committee), held in Rome from 7 to 11 December 2009 and 3 to 7 May 2010 respectively, the Committee at the conclusion of its fourth session decided that an intersessional meeting of the Informal Working Group (hereinafter referred to as the meeting) should be held prior to the holding of the fifth session of the Committee, to be held in Rome from 21 to 25 February 2011, with a view to advancing the work hitherto accomplished by the Informal Working Group. The meeting will be held in Rome on 19 and on the morning of 20 October 2010, with the possibility of extra time being found on the morning of 23 October 2010, if necessary.

3. All Governments participating to date in the work of the Informal Working Group and that of the Informal Working Group on limitations on remedies, also established by the Committee at its third session, have been invited to attend the meeting, together with those representatives of the international commercial space and financial communities having participated to date, as observers, in the work of the Informal Working Group. Those other representatives of the international commercial space and financial communities having been invited to participate in the consultations with representatives of those communities to be held on 18 October 2010 have, moreover, been informed of the holding of the meeting of the Informal Working Group and advised that the meeting is open to attendance by observers from the international commercial space and financial communities invited to participate in the consultations, regardless of prior participation in meetings of the Informal Working Group. The meeting will be moderated by the Secretary-General of UNIDROIT.

II. PROGRESS ACHIEVED TO DATE BY THE INFORMAL WORKING GROUP

(a) Progress made during the third session of the Committee

4. To quote from the Report of the Informal Working Group on components to the Committee on the work accomplished by it during the Committee’s third session, “[c]onsiderable progress was made …, notably in exploring the divergent points of view on the most appropriate solution to this problem. Time, however, did not permit the reaching of a definite conclusion.”

(b) Progress made during the fourth session of the Committee

5. The Informal Working Group, accordingly, continued with its task at the fourth session of the Committee. As the Secretary-General of UNIDROIT, who acted as moderator of the Informal Working Group, reported to the Committee at the conclusion of that session, “significant progress had been made, though no solution had yet been reached”. However, he “indicated his belief that this progress was such as to serve as a firm basis for the finding of an acceptable solution in future. In particular, he pointed out that the Informal Working Group had agreed that, while the future Protocol had to provide legal certainty, it was not desirable for it to become locked into a particular system for the determination of those assets that should qualify for registration in the future International Registry for space assets; in this connection, he noted that the Informal Working Group saw the regulations to be made or approved by the Supervisory Authority pursuant to the future Protocol as being able to play a part in providing the desirable measure of flexibility regarding the establishment of identification criteria for the purposes of the registration of international interests in assets that might become valuable to creditors in the future. He indicated, in addition, that the Informal Working Group had agreed that for individual components to be registrable in the future Registry, it would be necessary that the sum total of such components should correspond to the entirety of the space asset as a whole and not allow for an inflation of international interests in such assets without value, so as to avoid gaps in the information available in the future Registry to creditors”.

6. Significantly, “[s]everal delegations that had served on the Informal Working Group noted their satisfaction at the progress made and indicated that they shared the views expressed by [the Secretary-General]”.

III. ASSISTING THE WORK OF THE INFORMAL WORKING GROUP

7. With a view to facilitating progress at the forthcoming meeting of the Informal Working Group, the UNIDROIT Secretariat would invite those participating in its work to consider formulating proposals taking account of the discussions held during the fourth session of the Committee.

IV. ACTION TO BE TAKEN IN RESPECT OF THE OUTCOME OF THE MEETING

8. The Informal Working Group will be invited to report back to the Committee at its fifth session on the outcome of the meeting.

24 Idem.
25 Idem.
APPENDIX IV

PROPOSALS

by the Government of Germany

Introduction

In recent discussions about the definition of space assets, the terms “component” and “transponder” played a major role - unfortunately, without finding a viable definition. The current definition in Article I(2)(l) lists a number of objects and contains an opening clause for other objects not explicitly listed. A conclusive definition enumerating all assets would not be acceptable because it would exclude future developments with regard to space objects. It was agreed that a more structured definition should be found.

After intensive consultations with industry and with legal and financial experts, a new definition concept has been developed. This concept focuses on the key elements of every space asset by avoiding enumerative examples and problematic terms.

The new definition is limited to only two categories: “resource module” and “payload”. All space assets are describable using just these two generic terms, because every space asset is either a “resource module” (its function is to support and maintain the payload) or a “payload” (its function is to provide a certain service).

This concept applies to all existing categories of space object, like satellites, space stations and space vehicles. Though the new concept requires a separate registration of every asset, it is in line with the concept of the Aircraft Protocol, under which “airframe” and “engine” must be registered separately too.

A satellite consists of a resource module (satellite bus) plus payload(s) (optical, telecommunication, radar- or scientific payload). A space station consists of the resource module which is also constructed to carry payloads (experimental racks). Space vehicles are usually resource modules too, because they have a supporting function with respect to the transported assets. This paper contains further elaboration of the different space assets.

These examples demonstrate that, in spite of the simplicity of the definition concept, all possible space assets are covered with only two generic terms “resource module” and “payload”.

PART 1 THE DEFINITION OF THE SECURED OBJECT UNDER THE PLANNED SPACE ASSETS PROTOCOL

I. Preliminary remarks

Taking security over certain individual components of satellites and space stations, and thus separate commercialisation of these components, is one of the objectives that the planned Space Assets Protocol is supposed to achieve - so far as the problems involved can be solved. But the planned Protocol will only be able to do justice to this objective if the secured object is defined in such a way that it corresponds to technical and functional reality.
**II. Technical considerations**

(a) Satellites

Satellites usually consist of the resource module and the payload installed thereon, the components of which differ according to the satellite’s function.

1. Here the resource module, i.e. the “satellite bus”, constitutes a functional unit that is uniquely identifiable and is clearly distinguishable, in technical terms, from the remaining items.

2. The payload, too, is a uniquely identifiable functional unit and clearly distinguishable from the remaining items because its individual parts, as specified by the function indicated below,

- are physically linked to each other;
- are indispensable for the functioning of the precise payload concerned; and
- do not take over any function with respect to other payloads or to the satellite bus.

(i) *communications satellites*

The payload of a communications satellite usually consists of the following hardware components: receive antenna, receiver, switchbank, high-power amplifier, output multiplexer and transmit antenna.

(ii) *navigation satellites*

The payload of a navigation satellite usually consists of the following hardware components: time generator (e.g. atomic clock), signal coding processor, high-power amplifier, downlink antenna.

(iii) *earth observation satellites/weather satellites*

The payload of an earth observation satellite/weather satellite usually consists of the following hardware components: sensor(s)/camera(s), data processor, high-power amplifier, downlink antenna (usually an antenna for more than one sensor).

(iv) *scientific satellites*

The payload of a scientific satellite usually consists of the following hardware components: sensor(s) instrument(s) data processor, high-power amplifier, downlink antenna (usually an antenna for more than one sensor).

3. Transponders

The transponder, on the other hand, which so far has been conceived to be an independent secured object, is not uniquely identifiable as a functional unit and is not clearly distinguishable from the remaining items over which security can be taken. On the contrary, transponders are themselves items (high-power amplifier) of a payload. It is true to say that transponders, as part of a construction unit, are physically linked to each other and that they are indispensable for the functioning of a payload. Nevertheless, several transponders jointly depend on specific hardware of the communications payload (receive antenna, receiver, switchbank, output multiplexer and transmit antenna etc.).
(b) Space stations

Space stations usually consist of a resource module and the payloads, which are the operational elements integrated in the resource module (e.g. laboratory equipment).

1. In functional terms, the resource module corresponds to the satellite bus (e.g. E.P.S., stabilisation, pressurisation, data module) and it thus constitutes a functional unit that is uniquely identifiable and is clearly distinguishable, in technical terms, from the remaining items.

2. An operational element is equivalent to a segment of the payload and, being a functional unit, is uniquely identifiable and clearly and physically distinguishable from the remaining items of the space station, i.e. it can be installed and removed easily.

   An operational element is usually a standardised experiment locker (e.g. a 19-inch rack) and it does not perform any function with respect to other operational elements or to the resource module. Although experiments can be configured in every conceivable form in the space station, they are nonetheless always clearly and physically distinguishable.

3. The I.S.S. and its predecessor SpaceLab provide examples of usage in relation to space stations.

   The Columbus module is an independent resource module with its own experimentation apparatus, i.e. operational elements. After docking to the I.S.S., the Columbus resource module shares the E.P.S. with the I.S.S. resource module.

(c) Space vehicle

Here the classification under (b) above - by division into “resource module” and “payload/operational elements” - also applies.

An instance of usage with regard to space vehicles is the Space Shuttle or the Automatic Transfer Vehicle (A.T.V.). Space vehicles are used for independent experimental or repair missions, and they are also used for transporting infrastructure parts and resources to space stations.

(d) Launch vehicle

Launch vehicles comprise the bus and the asset requiring transportation (i.e. usually the satellites). In contradistinction to (a) 2., the payload in this case is, for example, the satellite itself that has to be transported – and not part of a satellite.

1. Here the bus constitutes a functional unit that is uniquely identifiable and clearly distinguishable, in technical terms, from the payload.

2. The payload is clearly distinguishable from the remaining items of the bus.

3. In future, parts of the bus, too, could be susceptible to economic re-use.

III. Legal considerations

(a) Satellites

The objective of creating a security interest as a means of credit protection necessitates clear and unequivocal designation of the objects to which such an interest may relate. At the same time,
the creditor must be certain that the object he is financing corresponds exactly to the object to which the security interest relates. The reference to the satellite bus and the payload as the secured objects of a satellite takes account of both these aspects.

By itself the **satellite bus** is a clearly defined and distinguishable technical unit and, therefore, suitable as a secured object. It also falls under the conceptual heading “resource module”.

Following the technical descriptions in Section II, a **payload** consists of hardware components jointly assigned to a specific service (mission) provided by the space asset concerned. These hardware components are used solely for this service, which means that, on the basis of their mission, they are clearly distinguishable from other hardware components installed on the satellite bus. At the same time, the sum total of these components constitutes the hardware needed in order to implement the services/business venture, thus entailing a need for credit financing, where applicable.

In view of the fact that an individual **transponder** shares the infrastructure of the same payload (receive and transmit antenna, receiver etc.) with other transponders, a transponder as such is not suited to constitute an independent secured object. Where there is a division of ownership / security (collateralisation) among the transponders embraced by one payload, conflicts would arise under property law (rights *in rem*) concerning the components used jointly by the transponders concerned. It is true to say that a legal construction would be conceivable here via “joint and several ownership” or via indivisible (ownership) shares for the respective owners/creditors; nevertheless, such a complicated construction would also need to be justifiable in economic terms - after all, it would lead to difficult conflicts on the compulsory execution level as well (e.g. regarding the adjustment of an antenna). But – as already explained – this is not possible here.

By referring to the secured objects of a “resource module” here, the “satellite bus” and a “payload”, two concepts have been found which are abstract enough to avoid also ruling out anticipated future developments from the realm of susceptibility to security (collateralisation); these concepts are, at the same time, precise enough to meet the certainty requirements applying to a secured object. Moreover, taken together, both concepts define a satellite in its entirety, because each component is functionally assignable either to the satellite bus or to the payload. Components not falling within these categories are not additionally conceivable.

(b) **Space stations, space vehicles and launch vehicles**

Space stations and space vehicles also consist of technically distinguishable and functionally clearly assignable individual components, as described under II (b) above. The resource module and the payloads are conceivable as an independent object over which security can be taken.

Launch vehicles will also fall under the term “space vehicles”. They consist of the bus (resource module) and the asset requiring transportation. At present, only the resource module with respect to launch vehicles can be the subject of an international interest, because the “payload”, usually comprising a satellite in its entirety, can in its components already form the subject of separate rights - as set out under III (a) above.

Even though reusability of launch vehicles does not currently present a realistic scenario, these objects should be seen as being susceptible to the international interest. If future developments allow the reuse of launch vehicles, payloads in the meaning of the definition below might be thinkable. Therefore, the phrase “payloads with respect to space vehicles” can be justified, even with respect to launch vehicles.
IV. Proposed new definition of “space asset”

Article I(2)(l) of the revised preliminary draft Space Protocol could read as follows:

“Space asset” means resource modules and payloads with respect to satellites, space stations and space vehicles, in space or intended to be launched into space. The Supervisory Authority shall describe technical details of space assets in the regulations.

PART 2 LIMITATIONS ON DEFAULT REMEDIES IN RESPECT OF PHYSICALLY LINKED ASSETS

I. Explanation

The default remedies under the Cape Town Convention are to take possession or control of an object, to sell or grant a lease of any object or to collect or receive any income or profit arising from the management or use of the object (see Article 8(1) of the Convention). The value of the international security interest suffers where the default remedies are limited. Thus, it is absolutely essential to keep creditors’ default remedies as unlimited as possible. On the other hand, the value of an international security interest suffers too where the use of the international interest in, or other rights related to the space asset are possibly and unlimitedly impaired by others. Therefore, creditors must be authorised freely to exercise those of their default remedies which only have an impact on their secured asset, (e.g. to collect or receive any income or profit arising from the management or use of the asset.)

In cases where the impact of a default remedy would not be limited to the secured asset but would have an effect on other physically linked assets, a considerable conflict of interest must be resolved.

A general rule is that a creditor exercising its remedies can only invoke its rights against the object it has rights in. Because of this rule, that the international security interest solely encumbers the asset in which it is registered, default remedies can only be exercised as far as that asset is concerned. Thus, it is basically not acceptable that a creditor holding a registered interest in only one asset impairs another asset (in which he does not hold any right). Therefore, to extend the impact of a default remedy to other parties (who have rights and interests in the impaired physically linked asset) should only be permitted where the impaired party consents thereto. Taking into account the fact that the defaulting debtor has still to agree with the relevant default remedy (see Article 8(1) of the Convention), it is even more logical that uninvolved parties have to agree too. All limitations on default remedies solely concern relations between the creditor and other involved parties. In relations between the creditor and its debtor no restriction shall take place.

II. Proposed new provision on limitations on default remedies in respect of physically linked assets

Article IX

1. Unchanged
2. Unchanged
3. Unchanged
4. The creditor shall only exercise default remedies against its secured asset in accordance with Chapter III of the Convention in so far as this does not [technically] affect the current use of international interests in, and other rights relating to other space assets physically linked to the secured space asset.

5. Other default remedies than those referred to in paragraph 1 may be exercised against the secured space asset where

   (a) the user or holder of an international interest in, and other rights relating to other space assets physically linked to the secured asset consents to it as far as he/she/it is impaired, or
   
   [(b) the creditor offsets the impairment of the current use of the physically linked space asset by taking equivalent technical measures.]
APPENDIX V

PROPOSAL

by Professor Souichirou Kozuka (Japan)

“In applying Article 8 of the Convention, unless otherwise agreed, taking control of an object charged to the chargee as a default remedy includes, when an international interest is in a resource module, acquiring the right to change the manner in which the resource module supports and maintains the payload, or part of it, that is hosted by the resource module.”
APPENDIX VI

COMMENTS

(submitted by Governments and representatives of the international commercial space and financial communities)

COMMENTS AND PROPOSALS SUBMITTED BY GOVERNMENTS

United States of America

1. ISSUES AND STATUS

I. Overview and timing

The U.S. Government’s position from the outset has been and remains that the purpose of the planned draft Protocol is to make financing more available or available on more favourable terms to expand commercial activities in outer space. This requires that the proposed draft, as was the case with the Aircraft and Rail Protocols, recognise applicable industry and financing practices necessary to attract private capital. Any efforts to create further obligations on secured financing parties, greater than exist now absent the Protocol, will reduce its value and make it unattractive to industry. This is especially the case given the already greater risk for investment and finance in the space sector as compared to commercial airspace. It is for these reasons that the U.S. Government has supported the concerns of key industry interests and will continue to do so.

The U.S. Government at the May 2010 session of governmental experts in Rome raised substantial issues on its behalf and on behalf of the Satellite Industry Association (S.I.A.), noting that, without the support of key space industry sectors, the planned draft Protocol could not achieve its objective. This was accommodated at the May 2010 session of the UNIDROIT Governing Council and the original time schedule, which contemplated a final conference at the end of 2010, was altered so as to allow additional time to seek agreement between participating States and industry.

The next session of governmental experts will now be in February 2011 and, if then approved by the UNIDROIT Governing Council, a diplomatic Conference could take place at the end of 2011 or early in 2012.

Note that the conclusion of a Protocol does not imply acceptance of the text. States would have to ratify the Protocol as a treaty instrument, along with the Cape Town Convention, in order to implement its terms.

II. Issues

There follows a summary of issues, together with comments on the status of these (i.e. any changes resulting from the May 2010 Rome session of governmental experts), and other issues:

(Omissis)
(b) Non-disturbance or quiet enjoyment provisions

See point No. 2 of the S.I.A. comments circulated at the May 2010 session of governmental experts. ¹

Current status: still an open issue, nothing resulting from the May 2010 session of governmental experts. The U.S. Government has recommended against any rule that would constrain enforcement of senior rights, subject to the normal limits of secured financing law, and recommended at the outset that the relationship between the various secured parties be left to inter-creditor agreements. Given the preference by some others for a default rule, the focus at the last session was on whether a workable default rule can be agreed to.

This issue involves the non-disturbance or quiet enjoyment rights of owners (and their creditors) of components. Basically, the issue involves the right of an enforcing creditor having an international interest in a whole, entire space asset to interfere with or disturb the quiet enjoyment of the owner (and its creditors) of component parts.

The initial proposal of another delegation extending this issue to functionally linked assets was dropped at the May 2010 session of governmental experts, which leaves on the table proposals concerning physically linked assets (e.g. components within a particular satellite). The U.S. Government and many industry interests have recommended that, since it is standard in the space sector for inter-creditor agreements to resolve related rights issues before accepting placement into a satellite of any components, the planned Protocol can best achieve its objectives by recognising such agreements. Some delegations, however, are pushing for a default rule to be set forth in the text of the revised preliminary draft Protocol. A default rule may be useful to protect senior creditors but it should be made subject to agreements among the parties.

The U.S. Government will pursue the point that seeking to dilute the value of senior interests would militate against attracting secured finance parties to the planned Protocol, particularly in the light of the general first-to-file priority system of the Cape Town Convention.

Consideration could also be given to a provision (similar to the Aircraft protocol as it relates to aircraft engines) which would displace any national laws that treat a component constituting a separate “space asset” as an accession to another “space asset” to which it is attached or installed.

(Omissis)

(f) Scope of the revised preliminary draft Protocol - component financing

See points Nos 1 and 5 of the S.I.A. comments circulated at the May 2010 session of governmental experts. ²

Current status: the inclusion of component financing is unresolved, with no change at the May 2010 session of governmental experts. The U.S. Government has supported inclusion to ensure flexibility to cover future financing developments. Some countries oppose the possibility of allowing for registration against a “whole” (e.g. the entire satellite) as well as against components of the whole (e.g. one or more transponders, a hosted payload, etc.). Efforts to meet these objections, while accommodating a more flexible registration system, continue.

¹ Idem, 10.
² Idem, 9 and 12-13 respectively.
The U.S. Government has been working towards a structure that would accommodate the financing of both whole space assets and also of substantial components on a stand-alone basis. However, some Civil law countries have pushed for agreement on definitions and rules which would preclude interests in both the whole and the components at the same time, i.e. the definitions of components, if such financing takes place, should, added together, equal the whole. Industry comments at that time favoured component financing as well as the more common financing today of the whole asset, so as to ensure that the revised preliminary draft Protocol could accommodate changes in financing practices in this sector. The U.S. Government also raised the S.I.A. concerns concerning the practicality of defining components in terms of their independent ownership, use or control characteristics and these concerns had a fair amount of support.

(Omissis)
APPENDIX VII

COMMENTS

(submitted by Governments and representatives of the international commercial space and financial communities)

COMMENTS AND PROPOSALS SUBMITTED BY REPRESENTATIVES OF THE INTERNATIONAL COMMERCIAL SPACE AND FINANCIAL COMMUNITIES

Arianespace, EADS Astrium, Eutelsat Communications and Thales Alenia Space

Proposal for a new definition of “space asset”

“Space asset means any type of spacecraft or human built satellite, intended or not to carry passengers, to be launched or already launched into space, including any of its two sub-assemblies, namely:

(i) the infrastructure on which the payload will be assembled, often called “platform” or “service module”, which supplies all means necessary for the payload to perform its mission in terms of transport, positioning and supply of energy;

(ii) the payload, i.e. all equipment necessary for the spacecraft or satellite to carry out its mission.

The Supervisory Authority shall describe the technical details of a space asset in the regulations.”
COMMENTS

(submitted by Governments and representatives of the international commercial space and financial communities)

COMMENTS AND PROPOSALS SUBMITTED BY REPRESENTATIVES OF THE INTERNATIONAL COMMERCIAL SPACE AND FINANCIAL COMMUNITIES

Satellite Industry Association of the United States of America

The Satellite Industry Association (S.I.A.) is a consensus-based trade association that serves as the unified voice of the U.S. satellite industry on policy, regulatory and legislative issues affecting the satellite business. The S.I.A. represents leading global satellite operators, service providers, manufacturers, launch services providers, integrators, ground equipment suppliers and satellite radio and television providers.¹

In many prior instances, the S.I.A. and its members have stated their concerns that the revised preliminary draft Protocol ² is not an effective instrument for increasing capital flow to commercial space projects. The S.I.A. considers that the revised preliminary draft Protocol adds an unnecessary supra-national layer of law at a time when neither the S.I.A. nor the financial community that supports its members believes a new legal regime is needed to expand space-based services or facilitate asset-based financing.

The S.I.A. opposes the continuation of a drafting process seeking to resolve identified deficiencies when the rationale for the establishment of a structure intended to promote legal certainty and increased availability of capital for the space industry requires reconsideration. Moreover, there is no evidence that financings have failed or could have attracted more favourable pricing due to uncertainty over the granting and perfection of security interests in the satellites being financed. No compelling need for the revised preliminary draft Protocol has been demonstrated, which explains why most of the space industry does not want it.

The specific issues the S.I.A. has identified below to support its position that the revised preliminary draft Protocol will jeopardise or disadvantage space asset financing have not been presented as problems to solve or provisions to be refined but as examples of why the revised preliminary draft Protocol must be reassessed.

(Omissis)

¹ As of October 2010, the executive members of the S.I.A. were as follows: ARTEL Incorporated, The Boeing Company, CapRock Government Solutions, DirecTV, Hughes Network Systems, ICO Global Communications, Intelsat, Iridium Satellite LLC, Lockheed Martin, Loral Space & Communications, Northrop Grumman, Rockwell Collins, SES World Skies, SkyTerra and TerreStar Networks. As of the same date, the associate members of the S.I.A. were as follows: Arqiva Satellite & Media, Alliant Techsystems, Cobham SATCOM Land Systems, Cisco, Comtech EF Data, DRS Technical Services, Inc., EchoStar, Emerging Markets Communications, Inc., Eutelsat, GE SATELLITE, Glolink, iDirect Government Technologies, Inmarsat, Marshall Communications Corp., Panasonic Avionics Corporation, Spacecom, Ltd., Spacenet, Stratos Global, TeleCommunication Systems, Inc. – Government Solutions, Telesat, Trace Systems, ViaSat and Wildblue Communications.

² Reference to the preliminary draft Protocol is as revised by the Drafting Committee established by the Committee of governmental experts for the preparation of a draft Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets on 3 May 2010.
2. **Components**

The inability of the Informal Working Group on default remedies in relation to components to reach a solution regarding enforcement against a space asset physically linked to another space asset in which another creditor has an interest (Article XVIII(3)) reflects a fundamental deficiency in the revised preliminary draft Protocol. A clash in legal systems jeopardises the utility of the revised preliminary draft Protocol as the financing of hosted payloads, condosats and transponders will continue to expand as a cost-effective means of deploying satellites.

We are also concerned by the statement made by the Informal Working Group that it was not desirable for it to become locked into a particular system for the determination of those assets that should qualify for registration in the future International Registry for space assets. In connection with this, the Informal Working Group saw the regulations to be prepared by the Supervisory Authority as being able to play a part in providing flexibility in the establishment of identification criteria for the registration of international interests in assets that might become valuable to creditors in the future. Such an approach would allow the Supervisory Authority unfettered discretion to alter and introduce criteria having an adverse impact on clarity and uniformity of what would constitute a space asset. This proposed approach to addressing component financing is all the more perplexing when the matter currently is adequately addressed through inter-creditor arrangements.

(Omissis)

**Conclusion**

The revised preliminary draft Protocol fails to achieve its expressed goal of facilitating the financing of space assets through a uniform and predictable legal regime governing the taking of security over space assets. The S.I.A. is not alone in its opposition to the substance and direction of the revised preliminary draft Protocol. Other industry participants representing a significant proportion of the space business in the U.S., Europe and Asia have all voiced their concerns. This is not an environment that is conducive to the promulgation of a complex international treaty intended to foster the development of the global commercial space industry.

A Protocol that has no meaningful support or input from its principal stakeholders is counterproductive. Until UNIDROIT’s members and the satellite industry can align their interests, endeavouring to conclude the drafting of an instrument that ignores fundamental concerns jeopardises its adoption by those States attuned to the needs and interests of their space industry. The S.I.A. again urges reconsideration of the need for the Protocol and expresses its serious concerns over its adverse consequences on the financing of space assets the world over.

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4 The European Satellite Operators Association (E.S.O.A.) (on behalf of its 10 members and 10 supporting members), the Asia-Pacific Satellite Communications Council (A.P.S.C.C.) (representing over 100 members from Asia, Europe and North America), Global VSAT Forum (comprising more than 200 companies from 100 countries in every major region of the world and from all sectors of the satellite industry), ING, Barclays Capital, ManSat, QuetzSat, Ciel Satellite, O3b Networks, Elseco, Marsh, Aon-ISB, SES, Intelsat, Eutelsat and Avanti Communications, among others, have each expressed their concerns about the revised preliminary draft Protocol and its effect on space commerce.