January 30, 2015

Via Email

Ms. Carla Milani
UNIDROIT Secretariat
Via Panisperna, 28
00184 Rome, Italy

Dear Ms. Milani,

On behalf of the members of the Satellite Industry Association (SIA)[1], I would like to express my thanks to UNIDROIT for continuing to engage with the satellite industry with respect to the Space Assets Protocol to the Cape Town Convention. Unfortunately, we continue to believe that the Protocol risks complicating and damaging what is today a successfully-functioning financing environment.

The global satellite industry continues to strongly oppose the Protocol. However, should UNIDROIT decide to proceed with its implementation, SIA has an interest in ensuring that it does as little damage as possible to the financial underpinnings of the industry. Therefore, we are enclosing responses to the Questionnaire for Industry Experts that was circulated by the Secretariat in November. We hope that you find them useful, and stand ready to answer any further questions you may have.

Very Best Regards,

Tom Stroup
President,
Satellite Industry Association

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[1] SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers. Since its creation twenty years ago, SIA has advocated for the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. SIA Executive Members include: The Boeing Company; The DIRECTV Group; EchoStar Corporation; Harris CapRock Communications; Intelsat S.A.; Iridium Communications Inc.; Kratos Defense & Security Solutions; LightSquared; Lockheed Martin Corporation; Northrop Grumman Corporation; SES Americom, Inc.; SSL; and ViaSat, Inc. SIA Associate Members include: ABS US Corp.; Airbus DS SatCom Government, Inc.; Artel, LLC; ATK Inc.; Cisco; Cobham SATCOM Land Systems; Comtech EF Data Corp.; DRS Technologies, Inc.; Eutelsat America Corp.; Glowlink Communications Technology, Inc.; Hughes; iDirect Government Technologies; Inmarsat, Inc.; Exelis, Inc.; Marshall Communications Corporation.; MTN Government; O3b Limited; Orbital Sciences Corporation; Panasonic Avionics Corporation; Row 44, Inc.; TeleCommunication Systems, Inc.; Telesat Canada; TrustComm, Inc.; Ultisat, Inc.; Vencore Inc.; and XTAR, LLC.

REVISED DRAFT REGULATIONS FOR THE SPACE REGISTRY

Questionnaire for Industry Experts

1. Are all types of payload:

(1) able to be separately financed, and
SIA RESPONSE: Theoretically, yes. This is actually a credit question to be determined by any financing source that may benefit from perceived collateral value in the asset it is financing. Payloads have occasionally been separately financed in the past and may be separately financed in the future.

(2) uniquely identifiable?
SIA RESPONSE: Theoretically, yes. The question remains whether the precision of identification will be adequate to convince a financing source to provide financing secured by the payload and to assure the financing source that the priority of its ranking will be reliable and recognized.

2. (1) Do you consider the identification criteria provided in the draft regulations generally to be adequate to provide unique identification of:

(a) a spacecraft;
SIA RESPONSE: No. The term "spacecraft" as defined in the Article I(2)(k) of the Space Assets Protocol includes such a broad array of assets (satellite, space station, space module, space capsule, space vehicle, reusable launch vehicle, including in each case accessories, parts, equipment, data, manuals and records) that there can be no consistent or common identification criteria that are clear, meaningful and precise.

The identification information in Section 5.3(c) of the 11 November 2014 draft Space Registry Regulations are deficient for the following reasons.

(i) "manufacturer's name": a "spacecraft" being a highly complex item of equipment involves numerous manufacturers at prime contractor and subcontractor levels and at various stages of production and assembly, both on the ground and in space. There is no indication of which single manufacturer, and at which stage of manufacture, is to be named.

(ii) "manufacturer's contract reference number": it is not common practice for aerospace manufacturers to use specific contract reference numbers to designate contracts for all types of space assets nor is it common to designate unique suffix numbers for more than one space asset manufactured under a single contract. The scheme for contract identification is sui generis to each manufacturer. At least two manufacturers among our membership do assign contract numbers to commercial satellite contracts or names to programs and such contracts or programs may include

more than one satellite being procured. These contracts or programs may identify satellites using a customer-designated name (which would be subject to change) or a generic reference, such as "F-1, F-2, F-3". However, there is no standard format that is used and this is due to customer preference.

(iii) "generic model designation": aerospace manufacturers do not follow common generic model designations. Generic designations are used only for satellites and certain space vehicles but not currently for other "spacecraft". These designations generally represent performance characteristics and are not considered to constitute identification criteria in any way. At least two satellite manufacturers from among our membership do have specific model numbers for each primary design of a satellite but they note that models are not always referenced in contracts, that all satellites are fairly customized, that different examples of the same model satellite may be used for different satellites and that the distinction is based on specific performance criteria and not identification.

(iv) "initial name of the spacecraft": there are no common names used for "spacecraft" other than "satellites". The initial name used for a satellite is usually determined by the customer and not the manufacturer and may evolve based on the project and purpose of the satellite. Some satellite operators change common designations as a matter of branding or for operational reasons. Common names are not reliable identifiers and they often change over time (e.g., for commercial reasons or as a result of mergers and acquisitions).

(v) "Coordinated Universal Time (UTC) of the launch, place of launch or COSPAR (Committee on Space Research) unique identifier": these peripheral or tangential data have limited utility as identification criteria and are not always easily confirmable or determinable. COSPAR states its objective to be the promotion, at the international level, of scientific research in space. Consequently the nature of its identification criteria is not suited to commercial asset identification for purposes of finance and the protection of security interests. We also note that the Space Assets Protocol applies to space assets financed before launch, in which case this identification information is irrelevant.

(b) a payload?

SIA RESPONSE: In addition to the comments above, which apply equally to "payloads" as space assets, the required identification information in Section 5.3(c)(iv) of the draft Regulations, namely the identification of "the spacecraft on which the payload is carried" begs the question of the proper identification of the "spacecraft" and creates possible confusion where the payload may be part of a "space station" or "space module" comprising more than one "spacecraft".

(2) The majority of the members of the Preparatory Commission have concluded that there is no reason why the same criteria should not be sufficient for pre-launch and post-launch registration. However, it has been suggested by one or two members that on a post-launch registration either the UTC and place of launch or any COSPAR unique identifier should also be required. What is your view?

SIA RESPONSE: As noted above, inclusion of UTC and place of launch and COSPAR identifier are of ancillary utility and the Preparatory Commission must decide whether numerous criteria, which may or may not be mandatory requirements to effect proper registration of international interests, will serve to undermine rather than facilitate asset-based financing, which is the aim of the Protocol. Date of launch would be a useful identifier but not always easily ascertainable after the fact.

3. It has been suggested, and the draft regulations now provide, that the initial name of a spacecraft could be used as one of the identification criteria.

(1) Are unique names assigned to all spacecraft in the manufacturing contract?

SIA RESPONSE: No. Names assigned to satellites are at the discretion of the customer, may be preliminary, generic and subject to change during manufacture or thereafter during the in-orbit lifetime of the satellite. Names are not commonly given to other types of spacecraft other than, perhaps, space stations or space modules.

(2) Are names always given a consistent spelling in the Latin alphabet?

SIA RESPONSE: No. The language of the manufacturing contract will likely dictate the alphabet used to name the satellite.

(3) Would it be useful to have the unique name as one of the identification criteria for the Space Registry?

SIA RESPONSE: Yes, provided that a unique name can be identified and that the name is consistently used and accords with commonly accepted conventions in a commonly agreed language.

4. It has also been suggested by some that the manufacturer's serial number and model designation should be added to a registration against a payload or part of a payload, while others doubt the utility of this. Is there merit in this suggestion?

SIA RESPONSE: For the reasons noted above, manufacturer serial numbers, in the rare instances when used, and model designation, which do not follow any common convention, are inapt, impractical and not useful in identifying a payload or part of a payload for purposes of registration of international interests, even where such information could be observable or detectable – which they would not be post-launch.

5. It has been suggested that one contract may sometimes cover more than one space asset under a single manufacturer's reference number. The draft regulations now provide that where this is the case there shall be added a suffix unique to the asset the subject of the prospective international interest, so that if the reference number for the contract as a whole was 1234567 the manufacturer could allot to the specific space asset the suffix 1, so that the number would become 1234567-1. Do you see any problem with this?

SIA RESPONSE: We do not see any problem with this assuming that manufacturers agree to adopt consistent and common reference

numbering. It is impractical to expect manufacturers to dedicate the time and effort to agree on an internationally accepted reference scheme unless persuaded by spacecraft customers and financial institutions. Please see further our response to Question 2 above.

6. Annex I originally referred specifically to transponders. However, it has been pointed out that there are other channels of communication such as beams which are not technically transponders but which fulfil a similar function, are separately identifiable and have an independent value. The problem is that the International Registry has been conceived as confined to physical assets, and for that reason the word "equipment" has been added to "communications." Is this definition sufficient to cover beams, etc.? If not, please suggest how the definition should be amended in such a way as to retain the concept that only interests in hardware are registrable.

SIA RESPONSE: We agree that, as referred to in the Space Assets Protocol, parts of a spacecraft or payload such as a transponder should be confined to physical assets. However, beams and radiofrequency channels that are not tangible have value and may be acquired and financed. The range of definitions used for these assets is broad and specific to the program or satellite. If these assets are not to be covered under the Space Assets Protocol, confusion will arise in determining which assets relating to communications are protected as international interests, particularly as channels and beams may be described to include shared assets such as repeaters and antennas. (See, e.g., the following definition: "Beam" shall mean a Satellite's communications subsystem hardware from the reflectors to the output port of the receive ferrite switch matrix and from the input port of the transmit ferrite switch matrix to the reflectors for any one beam.").

We are of the view that additional careful consideration must be given to determine how best to describe these space assets. Transponders and beams and similar communications channels constitute a diverse chain of individual and shared electronic and mechanical components that, collectively, have value and may be subject to separate financing. As technology advances, these channels will be described based on such advances and therefore be subject to different identification criteria. We believe that the Regulations must be adaptable to, and accommodate, future technologies for the Space Assets Protocol to properly serve its aims and goals but must equally be consistent with assuring creditors of the protection and priority of their international interests.

7. Do you agree with the proposed definition of transponders and other communications equipment in Annex 1? And could you give technical examples?

SIA RESPONSE: The proposed definition is ambiguous and broad and fails to recognize that certain component parts may be dedicated or shared to a specific space asset. One example is that a single purchased transponder often includes the rights to redundant hardware in certain failure scenarios. Presumably this contingent right is a portion of the collateral value of the asset if financed and may need to be noted if registration becomes required. The definition fails to recognize that the purpose of defining space assets is to facilitate the creation of an international registration system that is reliable, searchable and

protective of the interests of creditors and debtors financing space assets. The goal should not be to identify with technical precision transponders, other communications equipment, payloads or parts, but to adopt a registration system that uses consistent, clear, common and differentiated criteria involving a class of assets that is, by definition, broad and grouped together and that is not based on class of asset or technical classification but defined by destination.

Definitions of transponders, other communications equipment and payloads vary from contract to contract based on numerous factors, such as specific performance criteria and customer need, please see technical examples below from satellite manufacturing and related contracts:

"Transponder means individually those sets of equipment within the communications subsystem of the Satellite that provide a discrete path to receive communications signals from earth, translate and amplify such signals and transmit them to earth as further described in Exhibit __ (Technical Specification)."

"Transponder means the same as Communications Channel - individually those sets of equipment within the communications subsystem of the Satellite that provide a discrete path to receive communications signals from earth, translate and amplify such signals and transmit them back to earth, using one of the C-band, Ku-band, or any other frequencies [specified in the Spacecraft Technical Specifications – an exhibit to the contract]."

"Payload means all the communication equipment associated within the Satellite that receive communications signals from earth, translate and amplify such signals and transmit them to earth."

"Payload shall mean (i) the payload of C-band active Communications Channels ("C-band Payload"), (ii) the payload of Ku-band active Communications Channels ("Ku-band Payload"), or (iii) the payload of any active Communications Channels using any other frequencies[, in each case which are designed to meet the requirements of the Spacecraft Technical Specifications]."

"Hosted Payload means a payload that has been added to a satellite that operates independently of the principal payload but which shares the satellite's resources such as power and command and control."

8. Are there *parts* of a spacecraft or *parts* of a payload, other than transponders and other communications channels, which are in practice separately financed and uniquely identifiable so as to be appropriate for listing in Annex 1? If so, please supply details, including identification criteria.

SIA RESPONSE: Any equipment used on board space stations and space modules may in practice be separately financed future. However, equipment such as transponders and payloads are often not easily identifiable for registration purposes. This is no different to personal property that may be financed on an asset basis on earth. We agree

entirely with the Preparatory Commission that "parts" of a spacecraft or a payload that are nuts, bolts and screws having no independent function should not be the subject of registration. Moreover, we should not make determinations based on current technology, applications and space activity but must ensure that the Space Registry and attendant regulations will accommodate and facilitate future space endeavors involving an area of human activity that will continue to evolve rapidly and unpredictably.

9. The Preparatory Commission has so far focused on communications payloads. Are there are other types of payload separately financed and appropriate for listing, e.g. observation, navigation, weather, scientific, remote sensing? If so, what are the appropriate identification criteria for each type?

SIA RESPONSE: While communications payloads may be the prevalent type of equipment that have been the subject of financing to date, it is possible that new areas of endeavor may seek financing.