Providing GNSS services: the legal perspective. The existing regime and its shortcomings with regards to liability, data policy and data integrity"

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INTRODUCTION

GNSS Services → Applications → Legal issues

Global navigation satellite systems are being used for a very rapidly growing plethora of **applications** (Internet of things) and, thus, also cause a rapidly growing plethora of legal issues to arise. These range from **general institutional and jurisdictional ones** (multi-constellation services, up-link stations located in different countries and so jurisdictions, etc), to such concrete aspects as **certification, security, intellectual property rights and data protection**.

These issues, moreover, firstly, **interplay with each other**; secondly, do so at various levels (international/global, to some extent European, that is European Union, and national); and thirdly, do so in a number of respects across a number of economic sectors, transport and non-transport.

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INTRODUCTION

GNSS Services → Applications → Who is liable?

All these legal issues are implied when the fundamental question arises: **who is liable in case of damages in any manner caused by the provision of GNSS services/ applications?**

Before trying to give a (reasonable) answer, the actual scenarios must be shortly analyzed with regard to the following:

1. Definition of Global Navigation Satellite Systems;
2. Current satellite systems in a global perspective and main differences;
3. Kinds of GNSS based applications actually available.

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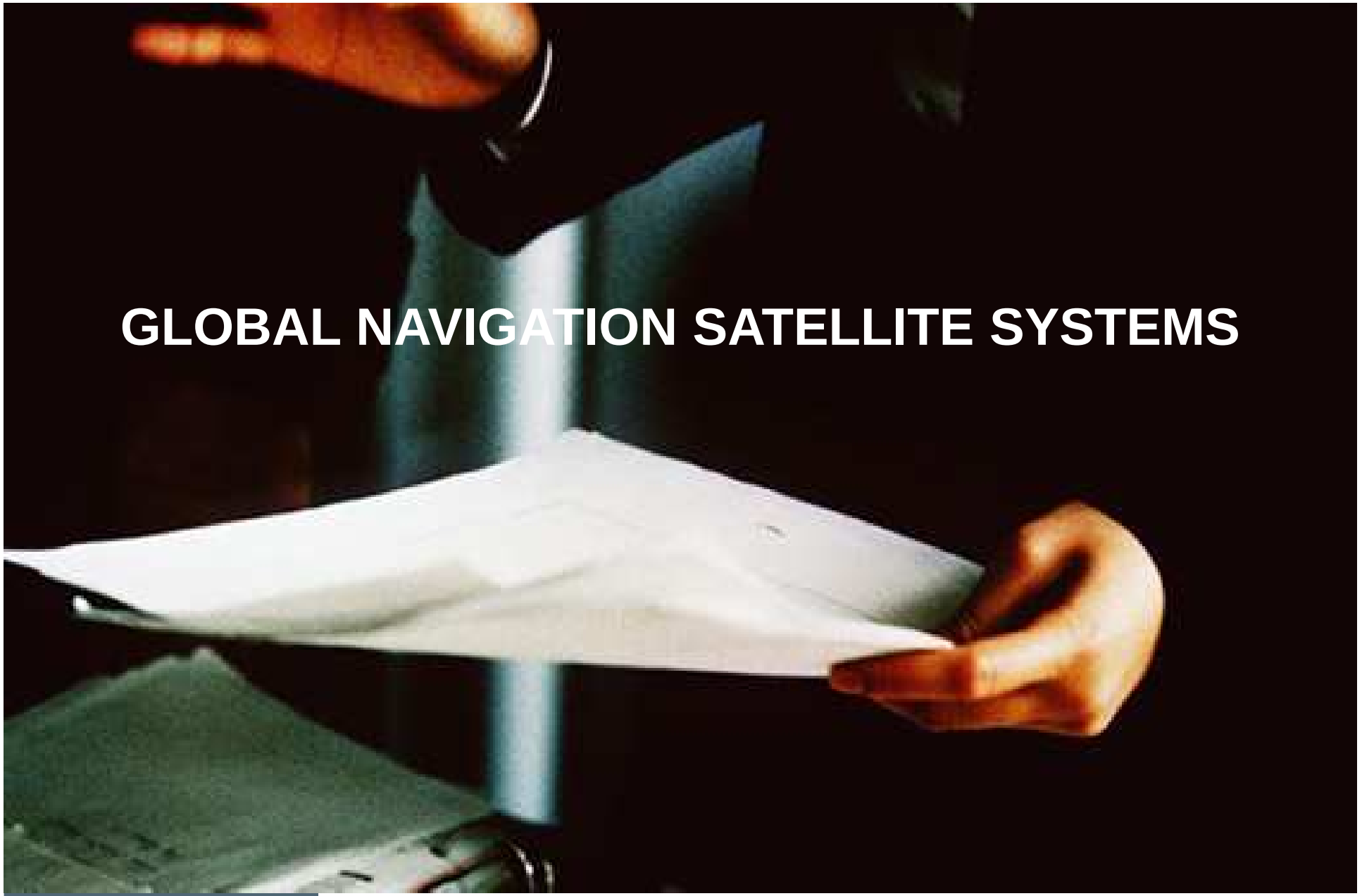

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TECHNICAL DEFINITION OF GNSS

Global Navigation Satellite Systems (GNSS) can be defined as *“space-based positioning and navigation systems designed to provide worldwide, all weather, passive, three-dimensional position, velocity and timing data*”.

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TECHNICAL DEFINITION OF GNSS

GNSS allows receivers to determine their location – longitude, latitude and altitude – using time signals transmitted along a line-of-sight by radio signals from satellites. Therefore, **precise timing (and nowadays real time precision) is one of the basic components of satellite navigation**; satellites are equipped with atomic clocks that are extremely accurate and provide Coordinated Universal Time (UTC).

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TECHNICAL DEFINITION OF GNSS

GNSS, in spite of their appellation which points solely to **navigation**, are also used for **positioning** and **timing**.

GNSS is made of three parts:

Satellites orbiting the Earth

Control and monitoring stations on the ground

Receivers owned by users.

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CURRENT SATELLITE SYSTEMS IN A GLOBAL PERSPECTIVE AND MAIN DIFFERENCES

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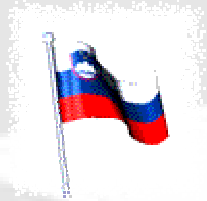
CURRENT SATELLITE SYSTEMS (Global coverage)

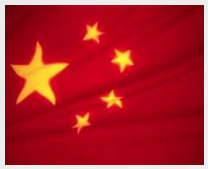
For the time being, the space parts of GNSS consist of these core constellations (some fully operational and some not):

NAVSTAR Global Positioning System (**GPS**) of the United States.



Global Navigation Satellite System (**GLONASS**) of the Russian Federation.

European Union's **EGNOS** and **GALILEO.**

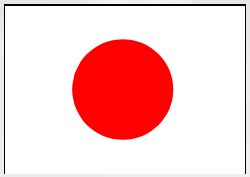


COMPASS-Beidou 2 Navigation System of China.

CURRENT SATELLITE SYSTEMS (Regional coverage)

Others satellite systems will be **regional GNSS** (and the regional characteristics is significant and impacts on managing the liability issues):

Indian Regional Navigation Satellite System (IRNSS) of India.



Japanese Quasi-Zenith Satellite System (QZSS).

MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

GALILEO is a global navigation satellite system currently being built by the European Union and European Space Agency (ESA) intended for **civilian use only** (even if it will be available **at its full precision** to both civil and military users), unlike the more **military-oriented** systems of the United States (**GPS)**, Russia (**GLONASS**), and China (Beidou-1/2, **COMPASS**).

GALILEO from the start was aimed at providing services to a number of **other transport applications** such as high-speed trains or vessels as well as **non-transport** applications like time **synchronization, mobile phones, building, and banking.**

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MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

One of the aims of GALILEO is to provide an alternative high-precision positioning system upon which European nations can rely, **independently from the Russian GLONASS and US GPS systems**, in case they would be disabled by their operators.

The use of basic (low-precision) GALILEO services will be free and open to everyone. **The high-precision capabilities will be available for paying commercial users**. Since the **high-precision capabilities will be available for paying commercial users, it also will have to accept a certain liability**.

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MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

Respect to **GPS** and **GLONASS**, **GALILEO** (the fully deployed system will consist of 30 satellites - 27 operational and 3 active spares - expected **by 2019**) shall provide **a highly accurate, guaranteed global positioning service** under civilian control: horizontal and vertical position measurements within 1-metre precision, **and better positioning services at high latitudes than other positioning systems**.

GALILEO should offer higher accuracy for every user, while **GPS** has high accuracy signal restricted to military/government agencies.

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MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

GALILEO, GPS AND GLONASS use **slightly different frequencies and thus are/may be incompatible**:

The United States and the European Union signed in 2004 an historic agreement establishing cooperation between GPS and Europe's planned Galileo system. The cooperation aims to ensure that GPS and Galileo **will be interoperable at the user level for the benefit of civil users around the world**.

The European Union and the Russian Federation were working on making GALILEO and GLONASS compatible and a cooperation agreement was under discussion.

MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

An agreement has been reached between the **European Union and China** on its participation in the GALILEO programme. This agreement was initiated in Beijing on 18 September 2003 and concluded on August 2014.

China will help GALILEO to become the major world infrastructure for the growing market for location services. Her counterpart in the negotiations.

China supports GALILEO and plans to participate actively in its construction and application for mutual benefits.

INTEROPERABILITY AND COMPATIBILITY OF GNSS

The key for having a real global GNSS system is to be found in the **compatibility** and **interoperability** of the systems. Compatibility and interoperability are thus major issues in the establishing of a global system:

Interoperability refers to the ability of global and regional navigation satellite systems and augmentations and the services they provide to be used together to provide better capabilities at the user level than would be achieved by relying solely on the open signals of one system.

Compatibility refers to the ability of global and regional navigation satellite systems and augmentations to be used separately or together without causing unacceptable interference and/or other harm to an individual system and/or service.

MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

The **GALILEO** system will have **five main services** (other secondary services will also be available):

OPEN ACCESS NAVIGATION

This will be available without charge for use by anyone with appropriate mass-market equipment; simple timing, and positioning down to 1 meter.

COMMERCIAL NAVIGATION (ENCRYPTED)

High precision to the centimeter; guaranteed service for which service providers will charge fees.

SAFETY OF LIFE NAVIGATION

Open service; for applications where guaranteed precision is essential. Integrity messages will warn of errors.

MAJOR DIFFERENCES BETWEEN GALILEO, GPS, GLONASS AND OTHERS

PUBLIC REGULATED NAVIGATION (ENCRYPTED)

Continuous availability even if other services are disabled in time of crisis; Government agencies will be main users.

SEARCH AND RESCUE

GALILEO will provide **a unique global search and rescue (SAR) function**. Satellites will be equipped with a transponder which will relay distress signals from the user's transmitter to the Rescue Co-ordination Centre, which will then initiate the rescue operation. At the same time, the system will provide a signal to the users, informing them that their situation has been detected and help is on the way. **This latter feature is new and is considered a major upgrade compared to the existing GPS and GLONASS navigation systems, which do not provide feedback to the users**.

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GNSS BASED APPLICATIONS: AN OVERVIEW.

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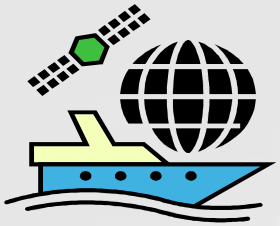
GNSS BASED APPLICATIONS: NAVIGATION, POSITIONING TIMING

Focusing on civilian applications, GNSS based applications can be divided schematically **into three groups** (however, the three groups are interlinked):

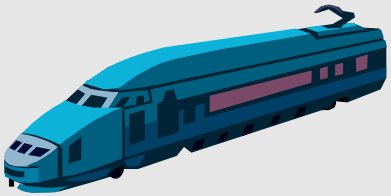


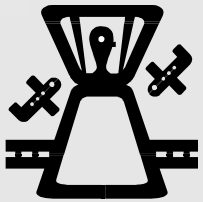
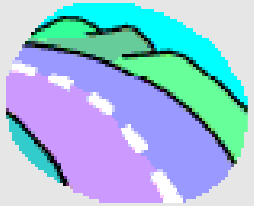
NAVIGATION

POSITIONING

TIMING.

GNSS BASED APPLICATIONS CONNECTED TO NAVIGATION



GNNS is primarily known for being the fastest and most accurate method for to **navigate, measure speed and determine location worldwide**:

Usual applications refers to the sectors **Marine navigation, Space, Road, Rail, Aviation.**

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GNSS BASED APPLICATIONS CONNECTED TO POSITIONING

GNSS **provide precise and reliable three-dimensional positioning** for natural and artificial features that can be displayed on maps and models of everything in the world - mountains, rivers, forests, endangered animals, precious minerals and many other resources.

GNSS BASED APPLICATIONS CONNECTED TO POSITIONING

Applications of positioning cover many different fields, including:

Fishing industry (GNSS help fishermen to return to the spots where fish is located), **Agriculture** (many farmers use GNSS-derived products to enhance operations in their farming businesses) **Disaster relief, Public order and public safety** (tracking of stolen vehicles; use GNSS tracing devices, even for people, in maintaining public order), **Research and scientific applications** (geography, environmental sciences, earth dynamics, polar studies and glaciology, volcano studies and monitoring), **Recreational activities** (biking, trekking, fishing, etc).

GNSS BASED APPLICATIONS CONNECTED TO TIMING

Each GNSS satellite contains **multiple atomic clocks that contribute very precise time data to the GNSS signals**. The receivers decode these signals, effectively synchronizing each receiver to the atomic clocks; this enables users to determine the time to within 100 billionths of a second.

Timing by GNSS is applied to many economic activities, **like communication systems, electrical power grids and financial networks, which all rely on precision timing for synchronization, cryptation and operational efficiency**.

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GNSS BASED APPLICATIONS CONNECTED TO TIMING

Banking and financial networks

Companies use GNSS to:

1. access networks via OTP (one-time-password) systems
2. time-stamp business transactions,
3. maintain accurate and consistent records;
4. ensure records' and operations traceability;
5. synchronize their network computers worldwide (this permits the tracking, updating and managing of multiple transactions made by a global network of customers, all of which require accurate timing information available through GNNS and with global synchronization).

GNSS BASED APPLICATIONS CONNECTED TO TIMING

Telecommunications

Telecommunications make wide use of GNSS timing services; for example, wireless telephone and data networks use GNSS time to keep all of their base stations in perfect synchronization.
This allows mobile handsets to share limited radio spectrum more efficiently.

Similarly, digital broadcast radio services use GNSS time to ensure that the bits from all radio stations arrive at receivers in lockstep. This allows listeners to tune between stations with minimum delay.

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GNSS BASED APPLICATIONS CONNECTED TO TIMING

Encryption

Encryption is the process of transforming information to make it unreadable to anyone except those possessing special knowledge, usually referred to as a key.

Encryption is specially used to protect data in transit, for example data being transferred via networks (e.g. the Internet, e-commerce), mobile telephones, wireless microphones, wireless intercom systems, Bluetooth devices and bank automatic teller machines. **Some encryption systems need very accurate synchronization, which can be provided by GNSS.**

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WHAT IS THE MEANING OF LIABILITY?

Since there can be a great confusion to define the juridical concept of “liability” it could be helpful to briefly consider the **concept of liability** which is a term used in numerous national and international legal regimes.

In each case, however, one major problem is that the concept of “liability” **may be differently interpreted and applied in various jurisdictions/legal systems** with the consequence that, especially at the international level, quite often a large measure of confusion has arisen as to the scope, meaning and consequences in law of liability.

WHAT IS THE MEANING OF LIABILITY?

Generally, "liability" is defined as a "*condition of being responsible for a possible or actual loss, penalty, evil, expense or burden*", and as "*the state of being bound or obliged in law or contract or justice to do, pay, or make something*".
In the context of GALILEO, this definition has been elaborated as:

"*the accountability of a person or legal entity to compensate damage caused to another person or legal entity, in accordance with specified legal principles and rules. This obligation may be prescribed in an agreement (contractual liability) or in a legal norm (non-contractual liability)*“.

CAUSES OF GNSS FAILURE OR MALFUNCTION AS SOURCE OF LIABILITY

The GNSS failure or malfunction can be caused by a variety of factors. Without any pretence of comprehensiveness, and leaving aside the fraudulent intervention of a third person, we can quote the following:

1. **fault or negligence of the provider;**

2. **defect of one of the GNSS component parts;**

3. **force majeure.**

CAUSES OF GNSS FAILURE OR MALFUNCTION AS SOURCE OF LIABILITY

Fault or negligence of the provider.

The fault or negligence of the GNSS provider, either in the implementation of the system or in its management and running, will normally be considered as a source of liability for the providers.

CAUSES OF GNSS FAILURE OR MALFUNCTION AS SOURCE OF LIABILITY

Force majeure.

It is disputable if - under the international existing regimes and under the domestic applicable law – force majeure (i.e. interruption or errors in the signal due to particular conditions, such as Sun activity; interferences with other conflicting signals) will be considered a cause of exoneration; this may depend on the predictability of that particular event, which can be source of controversy.

CAUSES OF GNSS FAILURE OR MALFUNCTION AS SOURCE OF LIABILITY

Defect of one of the GNSS component parts

It could be argued that in case of a GNSS failure or malfunction, the GNSS provider could be considered liable for defective product, because the GNSS signal could be qualified as a product.

In some jurisdictions, this would lead to **strict liability** of the provider.
In order to reach such a conclusion, **it would be necessary to qualify the GNSS signal as a product.**

This seems rather unlikely, because the signal should not be qualified as a good, **but as a service**.

CAUSES OF GNSS FAILURE OR MALFUNCTION AS SOURCE OF LIABILITY

Defect of one of the GNSS component parts

The regime of liability of the manufacturer could, on the contrary, come into play in case of defect of one of the GNSS component parts – satellites, ground stations, and receivers.
It is difficult to predict if the alleged defect of one of the GNSS components could entail a cause of exoneration of the GNSS provider (of course when manufacturer and provider do not coincide**). In the absence of an international uniform regime, it is possible that in such cases there will be a joint and several liability both of the GNSS provider and of the component manufacturer**; the GNSS provider who has compensated the damage will be able to exercise a right of recourse and sue the manufacturer for the recovering of the sums paid in compensation.

CAUSES OF GNSS FAILURE OR MALFUNCTION

Defect of one of the GNSS component parts

In this case, the **Convention on the Law Applicable to Products Liability, The Hague, 2 October 1973 could be applicable**. The Convention applies to "*the liability of the manufacturers and other persons specified in Article 3*" – i.e. manufacturers of a finished product or of a component part, producers of a natural product, suppliers of a product, and other persons, including repairers and warehousemen, in the commercial chain of preparation or distribution of a product, as well as the agents or employees of the persons specified above – "*for damage caused by a product, including damage in consequence of a misdescription of the product or of a failure to give adequate notice of its qualities, its characteristics or its method of use*".
But the Convention has only 11 Contracting States, all European.

CRITICALITIES TO ENFORCE LEGAL LIABILITIES WITHIN GNSS

When analysing liability for system signals and/or services/applications that use those signals as crucial elements, on the one hand, global navigation systems **do not and will not start operating in a legal or regulatory vacuum**.

On the other hand, most of existing laws and regulations is non-GNSS specific.

In many cases, the advent of global navigation satellite systems on the scene **merely adds another potential ultimate cause of damage** to those already in existence such as traditional navigation errors, human errors, engine failure or force majeure, **rather than leading to a fundamentally different, or separate legal paradigm**.

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CRITICALITIES TO ENFORCE LEGAL LIABILITIES WITHIN GNSS

The legal environment within which GNSS operate comprises a **wide range of separate and separately developed specific legal environments**, none of which were developed principally with global navigation satellite systems in mind. Yet all of them potentially or actually impact upon global navigation satellite systems and its applications. This includes liability. **Most of these environments are nationally defined.** That is, they operate only within the territory of one particular state even if occasionally, **as in air and space law, international regimes are superimposed.**

At the same time, a global navigation satellite system is inherently global, and both GPS and Galileo address global markets.

CRITICALITIES TO ENFORCE LEGAL LIABILITIES WITHIN GNSS

In this perspective – for example – the **usual categories of private international law in order to ascertain the applicable rules and the competent jurisdiction are not easily applicable**.

The issues of jurisdiction and conflict of laws in the field of civil liability are highly controversial and have given rise to a lively debate. The traditional rule of ***lex loci commissi delicti*** has been questioned, and partially rebuffed in favour of other solutions, both because in many cases **the "locus" itself may be difficult to ascertain, and also because it may not always be the more appropriate solution**. The relevant differences in the various domestic legislations, both on the establishing of the liability and in fixing the amounts of compensation, **can lead to forum shopping**.

CRITICALITIES TO ENFORCE LEGAL LIABILITIES WITHIN GNSS

A number of institutions, businesses and persons contribute to global navigation satellite systems functioning (multiconstellation services, up link stations located in various territories, several public bodies managing the infrastructure, several service providers involved). Although State authorities at present dominate the GNSS, private manufacturers are also involved.

In the event of damage caused by malfunction of the system any, or even all, of those involved may therefore be responsible for that malfunction. Thus, if a person who has suffered damage claims compensation it is necessary to determine the competent jurisdiction and the applicable law with respect to each possible defendant.

A POSSIBILE LIABILITY PARADIGMA FOR GNSS

From the perspective of seeing which liability regimes do or might apply to a GNSS and how they would apply, the fundamental threefold distinction between **contractual liability**, **non-contractual liability** and **product liability.**

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A POSSIBILE LIABILITY PARADIGMA FOR GNSS

Contractual liability - may be defined as the liability which arises from a contract or agreement and thus fundamentally deals with liability as between parties to a contract regarding activities undertaken in relation to damage suffered in the context of the contract and its subject matter.

Non-contractual liability - may be the liability for damage occurring outside a contractual relationship.

Product liability - may be defined as the legal liability of manufacturers and sellers to compensate buyers, users, and even bystanders, for damages or injuries suffered because of defects in goods purchased.

LIABILITY FOLLOWING THE KIND OF GNSS SIGNAL/SERVICE PROVIDED

To try to answer the fundamental question **which legal entities would be held liable (and when) to compensate for damage caused to another legal entity in the context of GNSS activities**, one has to start from a possible Legal/Functional Model (Model) for a global navigation satellite system and its activities which was developed for the European Commission.

As a generic concept based upon the existence of the currently operational systems, GPS and GLONASS, the Model presumes three essential categories of satellite navigation functions are discernable:

LIABILITY FOLLOWING THE KIND OF GNSS SIGNAL/SERVICE PROVIDED

1. **basic or primary signal provision**: which could hardly be labeled a "service provision" since existing basically of the provision only of signals-in-space carrying basic data;

2. **augmented or secondary signal provision:** which sometimes could be, and is, labeled "service provision", since more than just the signal-in-space carrying basic data is provided; and

3. **value-added service provision** (whose exponential growth is expected also in light of the EU Research and Innovation programme Horizon 2020).

LIABILITY FOLLOWING THE KIND OF GNSS SIGNAL/SERVICE PROVIDED: KEY ACTORS

This threefold categorization of activities leads to the following possible functional categorization of **key actors** in the context of a global navigation satellite system **with various categories of legal relationships involved** (also in the perspective of the liability):

1. **Basic signal service providers**
2. **Augmentation signal service providers**
3. **Value added services providers**
4. **End users (for example, airlines operators)**
5. **Consumers holding receivers/devices**

LIABILITY FOR BASIC SIGNAL SERVICE PROVIDERS

GPS

No barrier to access is in place, no fee, making it a clear open access-type signal available to end-users, value-added service providers and augmentation providers.
Absence of high-level accuracy and continuity, lacks the level of integrity monitoring.

GALILEO

The basic signal/open service will be provided for free and will be similar to the GPS, perhaps slightly enhanced in respect of accuracy and continuity.

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LIABILITY FOR BASIC SIGNAL SERVICE PROVIDERS

The provision of these signals would not give rise to contractual liability.

There is no contract between the parties: open access to those signals and the impossibility for the provider to monitor who receives and uses it would negate the existence of a contract.

However, they do not deny in principle the possibility for liability claims under tort law and non-contractual liability.

WHICH LIABILITY FOR GNSS OPEN SERVICES?

It may be argued that as some basic GNSS services are provided to users free of cost, **no liability could be attached to loss caused or damage suffered by users on account of failure or inaccuracy of the systems, because those who make use of the systems do so at their own risk**.

Although there might be differences under this respect in different jurisdictions, it is possible to affirm that liability would exist on the following grounds:

1. it is possible to affirm that those who make use of basic GNSS services also **follow Government authorities' authorizations and declarations** and so rely on the accuracy of the signal.
2. Generally when no causes of exemption exist (it is the case with many international instruments), liability is based on the notion of "**harm**" and not on the notion of "**fault**".

LIABILITY FOR AUGMENTATION SIGNAL SERVICE PROVIDERS

GPS

These systems make up for the lack of accuracy and integrity inherent in basic signals that precludes any safety-sensitive usage, **by augmenting the basic signals/services**: for example signals which do comply with the high levels required for aviation in most or even all phases of flight.

GALILEO

From a legal and regulatory perspective, the **commercial services**, the **safety-of-life services** and the **public regulated services**, can be taken together as augmentation services **because of the presence of a contract with the provider**: this allows to **determine the legal relationship with value-added service providers and end-users, including liability**.

LIABILITY FOR AUGMENTATION SIGNAL SERVICE PROVIDERS

The commercial services would specifically focus on providing higher accuracy by added data, higher continuity and higher availability with the support from local elements where required. A proper service guarantee would come to spell out the obligation of to provide services up to certain standards of accuracy, continuity and availability. **These services would be remunerated directly through a user fee, by any value-added service provider, or other user, interested in the higher accuracy, continuity and availability as well as the service guarantee likely to be provided**.

Liability issues may be then regulated by a contract with the augmentation signal service provider.

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LIABILITY FOR VALUE ADDED SERVICE PROVIDERS

Value-added service providers may use either basic or augmented signals/services, depending upon their need and the costs involved, to incorporate them into value-added services.

In these cases there can be far less doubt that the provision of such signals and services is a matter of contract.

Liability issues may be then regulated by a contract with the value added service provider.

TECHNICAL PRE-REQUIEREMNTS TO AVOID LIABILITY AND BREACH

Breaches and liabilities and all the legal issues under discussion may be in a way limited by better improving within GNSS:

- **Continuity of the signals**
- **Accuracy of the signals**
- **Efficiency of the signals**
- **Availability of the signals**
- **Reliability of the signals**

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COMPENSATION OF WHAT DAMAGE?

In terms of liability one should realize that, contractual liability principally should be seen to refer to **liability in case of damage caused by the one party to the contract to the other**.

All then depends upon the definition of "damage" in the legal liability regime applied to it.

Does it include indirect damage? If not, contractual liability could only refer to the damage caused to the contract partner's receiver, not to the damage resulting for example from incorrect information delivered to the receiver, or from information not sent to the receiver.

THE ISSUE OF THE THIRD PARTIES LIABILITY

Another criticality is the liability and enforcement thereof in case of damages suffered by third parties.

It depends on any applicable third-party liability regime, national or international, whether such third parties suffering damage could assert a claim not only to the entity or person causing the damage directly, for example, the aircraft operator, but also to the system signal provider having delivered wrongful navigation information to that entity ultimately at the root of the accident.

PUBLIC AUTHORITIES LIABILITY

Absent specific provisions to the contrary, any claim for public liability against the governments or holders of GNSS would be inadmissible.

In the GALILEO case, **regional or local external providers** of specific technicalities (aimed for example to enhance the signal or to provide higher signal integrity or security) **come into consideration.** As to the regional elements, special contracts namely, in the form of i**nternational agreements of a specific nature** might be entertained, in which case liability issues might be included in the contracts (Ukraine, Israel, etc).

PUBLIC AUTHORITIES LIABILITY

Just as the U.S. authorities would likely deny any liability other than of a non-contractual nature for the GPS basic signal, Galileo **would not accept any contractual liability for the open service** since it is not contracted for.

Similarly to GPS, Galileo **would also refuse to accept such contractual liability in jurisdictions other than those of the European states constituting the GSA**, so that it ultimately depends upon non-Galileo jurisdictions whether liability, alternatively a refusal thereof, might nevertheless be acknowledged.

PUBLIC AUTHORITIES LIABILITY

Nonetheless, Liability of EU institutions is also governed by Article 288 TEC:

"*The **contractual liability** of the Community shall be governed by the law applicable to the contract in question.*
*In the case of **non-contractual liability**, the Community shall, **in accordance with the general principles common to the laws of the Member States**, make good any damage caused by its institutions or by its servants in the performance of their duties.*
The preceding paragraph shall apply under the same conditions to damage caused by the ECB or by its servants in the performance of their duties.
The personal liability of its servants towards the Community shall be governed by the provisions laid down in their Staff Regulations or in the Conditions of employment applicable to them."

PUBLIC AUTHORITIES LIABILITY

Regulation (EU) No 1285/2013 Of The European Parliament And Of The Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council

WHEREAS (22) *It is important to note that the investment and operating costs of the systems as estimated for the period 2014-2020 do not take account of unforeseen financial obligations which the Union may be obliged to assume,* ***in particular those relating to liability arising from the performance of the services or Union ownership of the systems, especially with regard to any malfunctioning of the systems. Those obligations are the subject of a specific analysis by the Commission***.

PUBLIC AUTHORITIES LIABILITY

Article 6
(Ownership)

The Union shall be the owner of all tangible and intangible assets created or developed under the Galileo and EGNOS programmes. To that effect, agreements shall be concluded with third parties, wherever appropriate, with regard to existing ownership rights.

The Commission shall ensure, through an appropriate framework, the optimal use of the assets referred to in this Article; in particular, it shall manage the intellectual property rights relating to the Galileo and EGNOS programmes as effectively as possible, taking into account the need to protect and give value to the Union's intellectual property rights, the interests of all stakeholders, and the necessity of harmonious development of the markets and of new technologies. To that end, it shall ensure that the contracts entered into, under the Galileo and EGNOS programmes, include the possibility of transferring or licensing intellectual property rights arising from work performed under those programmes to third parties.

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PUBLIC AUTHORITIES LIABILITY

Article 31

Personal data and privacy protection

1. The Commission shall ensure that personal data and privacy are protected during the design, implementation and exploitation of the systems and that the appropriate safeguards are included therein.

2. All personal data handled in the context of the tasks and activities provided for in this Regulation shall be processed in accordance with the applicable law on personal data protection, in particular **Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data and Directive 95/46/EC of the European Parliament and of the Council**.

A SPECIFIC INTERNATIONAL TREATY ON THE CIVIL LIABILITY FOR SERVICES PROVIDED BY SATELLITE NAVIGATION SYSTEMS (GNSS) AS SOLUTION?

Alessandro del Ninno

INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

A failure or malfunction of GNSS could provoke damages which could be source of third party liability and could even hamper the diffusion of the system. As in many areas of activity with global impact (i.e. transports, nuclear activities, pollution), **an international uniform regime might address a range of problems** (jurisdiction, difficulty of identifying the responsible party, effective loss restoration mechanisms, co-ordination with existing conventional instruments).

None of the existing general international liability regimes applies to liability for accidents caused by GNSS failure or malfunction in transmitting the signal. Notwithstanding the existence of a variety of international treaties (on damages in the transport sector, nuclear sector, space sector, etc) which may be recalled in abstract, a number of accidents provoked by GNSS failure or malfunction could fall outside their scope of application.

WHY AN INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

An International Treaty on the civil liability for services provided by satellite navigation systems **would be a global instrument** (strengthened also by regional cooperation agreements), which might, following the example of most liability instruments, set a **liability limit that would also facilitate the insurability of the relevant activities, and cover aspects such as liability channelling, provision for supplementary compensation to guarantee satisfactory recovery of losses, and criteria for identifying the applicable jurisdiction**.

ADVANTAGES OF AN INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

An international instrument could address the issues of:

1. fraudulent intervention of a third person;
2. force majeure;
3. qualification of GNSS signal as a service;
4. liability in case of failure-malfunction caused by a defective component of the GNSS.

An international uniform regime on GNSS liability could **facilitate the insurability of GNSS activities**.

It could also **address the issue of open services** with respect with GNSS activities and clarify it.

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ADVANTAGES OF AN INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

An international instrument on GNSS liability could provide a **sound and uniform regime for all accidents caused by a failure or malfunction of the system, both for those covered and for those not covered by existing international regimes**.

The different constellations and augmentation systems are designed and implemented so as to be interoperable and fully compatible; thus, **an international uniform instrument could offer users one single regime, whichever the signal provider**.

ADVANTAGES OF AN INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

GNSS has a variety of applications, hence the possible sources of liability are equally varied. Many human activities rely on GNSS on a daily basis, and their number will progressively increase. It would therefore be extremely difficult for GNSS providers to foresee all possible events, each subject to different rules.

An international uniform instrument could offer a single liability regime applicable to all possible fields, also in case of new applications.

ADVANTAGES OF AN INTERNATIONAL TREATY ON GNSS CIVIL LIABILITY

An international instrument could be negotiated in cooperation with other international organisations which, in a way or in the other, take interest in GNSS systems, and making use of their expertise.

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THANK YOU!
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