

# The Impact of National Space Legislation on Private Space Undertakings: Regulatory Competition vs. Harmonization

Dimitri Linden<sup>1</sup>

<sup>1</sup>University of Leuven

Corresponding author: [dimitrilinden@gmail.com](mailto:dimitrilinden@gmail.com)

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**Executive Summary:** With the growing trend of privatisation and commercialisation of space activities, states have deemed the adoption of national space legislation the most suitable way to regulate and control private space initiatives in order to ensure compliance with international space law principles. Several states have thus far enacted national space legislation, which diverge in their contents and goals. This research compares in particular the national space laws of Australia, France, the United Kingdom (including the Isle of Man), and the United States in order to ascertain how these states may encourage companies to base themselves within their borders. Different incentivising aspects for private firms can be found in the analysed national space laws. These incentives exist on the level of the authorisation of space activities and most importantly with regard to liability and insurance requirements. Considering these differences in national space laws, the idea of regulatory competition is discussed and is contrasted with harmonisation of national space legislation.

While harmonisation is explicitly excluded in the European Union's space competence, there seem to be other ways to provide a more centralised approach to space legislation. These include the use of different legal bases, non-binding measures, the "enhanced cooperation" mechanism, the "approximation of laws" basis, the flexibility clause *ex article 352 TFEU*, and the "open method of coordination". Harmonisation in this context can be desirable when keeping objectives such as the prevention of "flags of convenience" and "forum shopping" phenomena, increased technical safety through the harmonisation of quality standards, mutual cross-border recognition of authorisations, and increased consistency in the interpretation of international space law, in mind. The harmonisation of the registration of space objects should be encouraged as to ensure that all necessary information of space activities is transparently available. On the other hand, aspects like the political sensitivity of space activities for states and the diversity in market characteristics in the space sector contradict harmonisation. Current discretionary powers of states with regard to licensing, export control, and other regulatory aspects could make these states more reluctant to opt for harmonisation in these areas.

## I. Introduction

The existing body of international space law was enacted in a time frame where nation states were the main actors in space, so logically, the international *corpus iuris spatialis* generally addresses state actors. The growing trend of

privatisation and commercialisation of space activities, however, brought (and still brings) legal challenges to space law. With this emergence, it soon became clear that adopting national space legislation was the best suited instrument to regulate and to control private space initiatives. This finding was

supported by the fact that states are responsible for ensuring that national space activities, including those conducted by private companies, are in compliance with international space law principles.

In this regard, it seemed more appropriate for states to govern the involvement of their nationals in space domestically, rather than developing new internationally agreed rules.<sup>1</sup> But this adoption of national space legislations is not only the practical result of the legal obligations arising out of the international space law treaties. This legalisation of space activities is the logical step forward given the ever-increasing participation of private actors in the space industry.<sup>2</sup> Greater regulation will provide increased certainty for all concerned parties, which in turn will encourage other interested parties to take the leap as well.<sup>3</sup> So far, the adopted national space legislations tend to differ in scope and content. These differences are the product of the intrinsic characteristics and extent of the space activities carried out under the supervision of the state in question.<sup>4</sup> The diversity in national space laws creates an expanding pool of regulatory frameworks to choose from. This choice may well be crucial for the success and profitability of the business at hand.<sup>5</sup>

In light of this, it is possible that competition between regulatory environments will develop, as states profit from private undertakings establishing themselves in their territory. For states, this will lead to increased economic activity, which in turn decreases unemployment, lowers social welfare costs, and raises tax revenues.<sup>6</sup> It is not surprising, then, that states would want to attract these private firms to their territory through their national space laws. Besides these possible incentives in national space laws, states classically deal with their responsibilities flowing down from international space law in their national space legislation. These international commitments are still the common denominator for enacting national space legislation. To have a better understanding of the content of national space legislations, an introduction of the relevant provisions of the international law is due. Bearing the subsequent discussion of regulatory competition in national space legislations in mind, an analysis of certain national space laws is given, with focus on the measures in these laws that are considered attractive and crucial by private companies. The national space laws of Australia, France, the United Kingdom (UK) (including the Isle of Man), and the United States (US) will be analysed.

Talking about regulatory competition inevitably brings up the question of harmonisation, which resides at the other side of the spectrum. In line with the evaluation of different national space laws, this research delves deeper into the legality and desirability of harmonising national space legislation, with a focus on the European Union (EU).

## II. International Legal Framework

The international legal framework primarily consists of the international space law treaties. These treaties were adopted within the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), a subsidiary body of the United Nations General Assembly (UNGA). It should be noted that the treaties are directed towards states and, in subsidiary order, international organisations. Private entities do not have any rights or obligations stemming directly from these treaties.<sup>7</sup> While this section specifically deals with international space law, it should be reminded that general international law (*e.g.* state liability doctrine) can also be a driver to have certain aspects of space activities regulated nationally in order to adhere to states' rights and obligations arising from international law. International space law, of course, takes precedence over general international law for matters that international space laws specifically governs.<sup>8</sup>

### Outer Space Treaty

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies of 1967 (OST) can be regarded as the basis of international space law.<sup>9</sup> The OST applies to space activities of individual states, to those of their nationals, to joint activities and to the activities of international organisations of which a state party may be a member.<sup>10</sup> One of the fundamental principles enshrined in the OST is that general international law applies in outer space.<sup>11</sup> Another fundamental principle is that outer space and celestial bodies are free for exploration and use by all states. In line with the foregoing, the OST prohibits national appropriation of space or celestial bodies.<sup>12</sup>

International responsibility and liability is discussed in articles VI and VII of the OST. In general international law, states are responsible for acts that are attributable directly to them, or indirectly through acts of their officials acting in an official

capacity.<sup>13</sup> The OST deviates from these general rules of international responsibility by proclaiming that states are also responsible for “national activities,” including those conducted by non-governmental bodies (*e.g.* private firms). These national activities require authorisation and continuing supervision by the “appropriate state”.<sup>14</sup> Article VII OST then goes further by declaring that states (being the authorisers and supervisors) who launch or procure the launch of a space object, or from whose territory or facility a launch takes place, are liable for damage caused to another state party or to its nationals on earth, in airspace, or in outer space. This broad basis for liability is quite unusual and innovative in international law. The Liability Convention of 1972 further elaborates this international liability provision.<sup>15</sup> It should not be surprising that states will want to exercise authorisation over entities that may impose international liability on the respective state by their activities. By way of control through authorisation, states can deal with potential liability.<sup>16</sup>

Because of the responsibilities set forth in articles VI and VIII OST, appropriate registration of space objects is important. This is the reason the Registration Convention of 1975 was drafted.<sup>17</sup> Space objects (as well as any personnel on-board) that are registered by a state remain under the “jurisdiction and control” of that state.<sup>18</sup> They are the property of the state of registry and cannot be abandoned to become ownerless.

#### Liability Convention

The Convention on International Liability for Damage Caused by Space Objects of 1972 (LIAB) deals with international liability for damage in more detail.<sup>19</sup> Launching states are liable for damage caused by their space objects. “Damage” is defined as “the loss of life, personal injury or other impairment of health; or loss of or damage to property of states or of persons, natural or judicial, or to property of international intergovernmental organisations”.<sup>20</sup> A “space object” is broadly defined and includes “component parts of a space object as well as its launch vehicle and parts thereof”.<sup>21</sup>

Liability itself is elaborated in articles II and III LIAB. A distinction is made between absolute and fault-based liability. Launching states are absolutely liable for damage caused by their space objects on earth or to aircraft in the air.<sup>22</sup> This is an objective liability where no fault is required. Moreover, launching states are liable for damage caused to a

space object when the damage is caused in outer space by a space object of the launching state.<sup>23</sup> This liability requires that the damage was caused due to a fault of the launching state or of its nationals. Article XII LIAB provides that the compensation is to be determined as to “restore the person, natural or judicial, State or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred”. The article has generally been interpreted to mean that the injured party should be fully restored to the situation prior to the occurrence of damage, which amounts to full compensation. Furthermore, there is no time limit on the launching state being liable: once qualified as a launching state, the state will remain a launching state and will thus stay liable as long as the space object can possibly cause damage, even if the space objects are derelict.<sup>24</sup> All things considered, the LIAB takes a victim-oriented approach.

#### Registration Convention

The Convention on Registration of Objects Launched into Outer Space of 1975 (REG) obliges space objects to be registered in at least two of three registers.<sup>25</sup> They should be registered in a national register of the launching state and also in one of the two registers held by the United Nations Office for Outer Space Affairs (UNOOSA).<sup>26</sup> The actual form, content, and maintenance of the national register is to be decided by the state in question.<sup>27</sup> This national register is the core requirement of the REG. Registration is important to coordinate launches and to find out which state is considered a launching state, which may be important in case of damage and liability.<sup>28</sup> It is the launching state that is required to register its space objects. It is important to note that only a single state can retain jurisdiction and control; namely, the one that has registered the space object.<sup>29</sup>

The definition of a launching state raises questions with private firms conducting launches. While the territorial category is quite straightforward, the condition of launching or procuring the launch causes problems in case of private space activities, especially when dealing with arrangements between partner companies. Is a state a “procuring” state when its national provides but one part of a space object? Advantage can possibly be taken of the fact that only one state is obliged to enter the space object in its register, even when there are two or more launching states involved.

Here, the most attractive national regime may be chosen.<sup>30</sup>

### III. National Space Legislation

As has been stated, most states opt for a national law when dealing with their obligations arising from international space law (notably international responsibility, liability, and registration). Hereafter, the national space laws of four states will be analysed: the ones of Australia, France, the UK (including the Isle of Man), and the US. It is important to note that all these states are legally bound by the provisions of the three international space law treaties discussed above. Because this research focuses on the incentivising measures found in national space laws, emphasis will be put on the most relevant aspects in these laws related to possible incentives: (1) the implementation of the authorisation and continuing supervision principles, and (2) how the legislation deals with international responsibility and liability.

#### Analysis of national space legislation

When looking at incentives for private undertakings, one aspect that affects whether a certain regulation is regarded as beneficial for private firms is the presence of a forum where industry can have a say in the regulation of this highly technical and specialised industry. This provides the potential to make regulation more adapted to the industry. Both the UK and the US offer such forums.<sup>31</sup> Similar feats to involve the industry in the regulatory process can be found in the Isle of Man.<sup>32</sup>

All four regimes provide for a certain margin of appreciation for the authorities to regulate the authorisation of private space activities. Each activity is different and none is shaped for mass production. It is believed that a strict and detailed regulation may be too stringent to provide adequate governance for smaller (aspiring) operators, in particular with regard to liability and insurance responsibilities. However, discretion gives the possibility to favour certain (national) operators. Authorities may even go as far as refusing licences for operators that contract with foreign providers on the basis of, for example, security or safety. Flexibility could thus be seen as a factor of legal uncertainty and potentially of discrimination. The same could be done by adopting certain compulsory technical standards to protect national industry. The application of certain standards may affect costs

involved in design and construction. On the other hand, widely applied standards may reduce costs in the long run when operators already adhere to these standards.<sup>33</sup>

The fact that France gives the opportunity to award space operators active in space on an ongoing basis an authorisation for a certain period can be an example of an incentive for private undertakings. This opportunity makes the authorisation process less cumbersome and it may even be waived for perpetual activities.<sup>34</sup> The UK also offers some flexibility with regard to the authorisation conditions: the detailed requirements to be complied with are not fixed beforehand, but rather decided by the authority for each specific application.<sup>35</sup> Private firms could see this as beneficial since it means that the conditions will most likely take into account the specifics of each space activity and will be adapted to them accordingly. It also gives the impression that a dialogue with the authorising authority would be possible when determining the authorisation conditions. The US is the only state that offers an “experimental permit” with relaxed conditions for a restricted type of activities in order to give reusable suborbital launch operators a possibility to conduct tests without having to obtain a normal licence.<sup>36</sup> Australia offers its space licences for a period of up to 20 years, possibly lessening the authorisation burdens when compared to other states.<sup>37</sup> In a general way, negative effects in the eyes of space operators are uncertainties of administrative procedures (with the added uncertainty of actually obtaining a licence in the end) and technical regulations to be complied with.<sup>38</sup>

Exemptions to obtain an authorisation can also be seen as an incentive in the eyes of private operators. The fact that Australia and the US give the opportunity for such an exemption if the relevant authority is satisfied that the operation is safe amounts to a certain flexibility that could come in handy when negotiating with the authorities to get a green light to conduct space activities.<sup>39</sup> France also provides for exemptions in case of foreign launches where it deems the required conditions under the French national space law complied with.<sup>40</sup> The UK, on its part, finds authorisation unnecessary when arrangements have been made with another state in order to secure compliance with the UK’s international obligations.<sup>41</sup>

States that limit the possible reimbursement of the licensee to his state due to the state being internationally liable do give an incentive to their private industry. States party to the international space law treaties cannot escape unlimited international liability under these treaties and thus opt to share some of the financial burden if they introduce a limitation on the reimbursement obligation of their licensees. The states act *de facto* as some kind of reinsurer for the amount that goes beyond the financial obligations connected to the licence.<sup>42</sup> Because of the inherent risks of space activities and the large uncertainties around accidents and damage resulting from space activities, it is likely that the extent of the damage for which compensation can be claimed is far above the financial capabilities of a single commercial entity. In this regard, financial government support would become essential for commercial entities to realistically operate in space.<sup>43</sup> Not only does this system provide financial incentives for space operators, but also provides clarity of their maximal risk and therefore eases the financing of the activity.<sup>44</sup>

In Australia, France, and the US, such limitations can be seen. In France, this liability ceiling is currently set between €50 and €70 million.<sup>45</sup> Any amount to be paid above this ceiling is taken care of by the French government, without limitation. However, this only applies to damage caused on the earth or in airspace.<sup>46</sup> Similar provisions are in place in the US, but the US government inserted a cap on that governmental guarantee: US\$1.5 billion.<sup>47</sup> Australia also provides for a cap on the governmental guarantee (A\$3 billion), but it only applies to claims regarding damage to Australian nationals, while in the US it applies to any claims.<sup>48</sup> This means that the American regime is more beneficial in theory. In practice, it would depend on the launch site and the type of space activity (*e.g.* the spacecraft's destination).

The obligation to indemnify the full damage in case of international liability of a state party to the international space law treaties (like in the UK) can definitely exceed the financial capabilities of the liable space operator and, by the same token, that of any private insurer.<sup>49</sup> This may cause insurers to refuse coverage for space operators. Given the potential immense liability claims and the importance of financial certainty for private firms, this is a clear disincentive for space operators.<sup>50</sup> This

rule is quite cumbersome on the emerging space industry (especially when compared to the caps in other states), but may possibly change in the future out of fear that the UK may become an outsider in the drive for the commercialisation of space activities.<sup>51</sup>

Because of their financial impact, obligatory insurance requirements are one of the most important considerations private space operators will make when deciding where to conduct their space activities. The UK currently demands an insurance of £100 million.<sup>52</sup> In France, the obligatory insurance is equal to the liability ceiling (currently set between €50 and €70 million). France goes a step further and gives the possibility of an exemption from the insurance obligations in case it is impractical to obtain an insurance, and for the period that satellites do not change their orbital position.<sup>53</sup> Australia obliges space operators to take up insurance for the lesser of the "Maximum Probable Loss" (MPL) or A\$750 million. The MPL is based on losses that can reasonably be expected to occur from the licensed activity.<sup>54</sup> The US has the most flexible regime, providing three possible options: the lowest of the MPL, "the maximum liability insurance available on the world market at a reasonable cost", or US\$500 million.<sup>55</sup> While both Australia and the US use the MPL standard for the financial obligations for their licensees, it is possible that insurance requirements will be less demanding in Australia in practice, because the risk is less there (so the MPL as well in theory) given that the territories are less inhabited than in the US.<sup>56</sup>

National space laws can also provide a variable liability scheme with insurance requirements being determined on a case-by-case basis, which can possibly be beneficial for private firms and incentivising for an industry. While it is clear that the Netherlands operates such a regime, it can be argued that the US, with their concept of "maximum liability insurance available on the world market at a reasonable cost", also provides for some leeway with regard to the insurance obligation.<sup>57</sup> This approach requires some caution as it leads to legal uncertainty for involved private firms. However, preliminary talks with the relevant authorities could take away this uncertainty if they clearly state what the insurance requirements are for a particular firm or space activity. In the same way, the authority should also take into account what insurance the particular firm can reasonably obtain on the market. Like with

all discretionary mechanisms, this case-by-case determination opens the way for discrimination and possible corruption.<sup>58</sup> This feat can, however, be seen by private firms as an incentive, because it gives the assurance that the insurance obligation can actually be met by obtaining an insurance that is available on the market.

Environmental requirements may seem burdensome on aspiring private space firms-- it is yet another regulation that takes financial effort to comply with. However, environmentally-friendly thinking may also prove an asset for the private company towards public opinion. By complying with the environmental regulations in force in a certain jurisdiction, the undertaking can boost its public image with an eco-friendly label that is increasingly important. Keeping this in mind, the environmental requirements may themselves even become an incentive in the eyes of undertakings.<sup>59</sup>

#### **IV. Regulatory Competition, Harmonization, and National Space Legislation**

To introduce the topic of regulatory competition and harmonisation, some theoretical background is given in order to provide an adequate basis that can be used when assessing these issues specifically with regard to space law. The forms, conditions, advantages, and disadvantages will be explored accordingly. In the end, several examples will be given of how both types of regulation appear in practice. Afterwards, the focus is put back on national space legislation when it is examined if harmonisation of national space laws is legally possible and/or desirable.

##### Regulatory competition vs. harmonisation

###### Regulatory competition

Regulatory, institutional, or rules-based competition occurs when states compete with each other, in their capacity as regulators, to attract resources and mobile factors of production (*e.g.* undertakings). It is one of the reasons that the form and content of domestic laws are not only the result of a natural and purely domestic evolution of their system. External factors, such as the success of foreign systems, also have a part in this. For regulatory competition to take place, there must be actual or possible access to the market where the regulators are present. In this context, mobility is important: citizens should be able to choose the jurisdiction whose principles are to apply to their transactions.<sup>60</sup> Besides mobility, regulatory

competition also requires information on the substance of foreign rules. Likewise, the legal possibility for potential legal subjects to demand and exploit competitive advantages and the legal possibility for regulators to respond to market forces by enacting regulations as demanded are required for regulatory competition to work.<sup>61</sup> Additionally, the potentially competing regulator must be convinced of the benefits that he will gain by entering the regulatory competition. Besides being economic, these benefits may also be political or social.<sup>62</sup> Regulatory competition is a growing trend and one factor for this trend is globalisation. The great increase in mobility has stirred the dynamic forces that influence the market for regulatory frameworks applicable to firms.<sup>63</sup>

Advantages and justifications for regulatory competition include the effective matching of the substantive rules with the desires and preferences of the citizens. Different laws are able to satisfy more, distinct preferences of citizens. The more regulators compete, the more preferences may be satisfied (in theory). Logically, the more homogeneous the preferences are, the less advantageous regulatory competition will be. When preferences are more heterogeneous and mobility across jurisdiction is possible, it should be presumed that competition between legislators has a positive impact on (economic) society.<sup>64</sup> Other advantages are the promotion of diversity and experimentation in the quest of finding effective legal solutions, and the promotion of information flows on law-making by providing means for preferences to be expressed and for alternative solutions to be compared. Proponents of regulatory competition argue that it stimulates innovation and product differentiation in regulation, amounting to the creation of more competitive, efficient, and qualitative laws. The dynamics of competition also apply to the market of regulations.<sup>65</sup>

Classically, theorisations have warned about "races to the bottom" when dealing with regulatory competition. Generally, this phenomenon occurs under conditions of economic interdependency between jurisdictions, when one state lowers its regulatory standards in order to attract investments. The other states will then lose businesses, revenue, and labour, prompting them to react by lowering their own standards. This then creates a cycle of systematic lowering of regulatory standards that ends up with all states (and consumers) being in a

position which is worse than the one they were in before this race to the bottom or by coordinating their policies.<sup>66</sup> Races to the bottom thus call for harmonisation and/or intervention on a centralised level. In the same manner, races to the top can also occur. States then respond to an initial raising of standards by raising their own regulatory standards in order to retain market access. Examples of such standards include the regulation of intellectual property, health and safety regulations, and environmental standards.<sup>67</sup>

#### Harmonisation

At the other side of the spectrum, harmonisation or centralised regulation can be found. This implies the forced coordination of legislation by a centralised regulator. To justify such an approach, it is often argued that diverging legal norms create unequal conditions of competition and that such diversion should be minimised as to create a level playing field for the market actors. Regulatory competition may lead to lower (quality) standards that have a negative effect on citizens.<sup>68</sup>

According to neo-classical welfare economics, factors in favour of centralised regulation include the avoidance of a race to the bottom, the need to internalise externalities across jurisdictions, the reduction of transaction costs, and the attainment of scale economies. Market imperfections for legislations may thus justify (quasi-)centralised rules. However, these advantages and their magnitude differ between areas of law. For example, a race-to-the-bottom scenario is more plausible and dangerous in the field of tax law. In any event, such a scenario has to be assessed empirically. Externalities, on the other hand, occur when parties are able to enter into (contractual) relationships that have detrimental effects on third parties or on the public in general. A good example of this can be found in environmental law: if a state lowers its environmental standards to attract businesses and, subsequently, the damage caused to the environment is not contained in the territory of the former state, other states bear the costs of this lowering of environmental standards.<sup>69</sup> Contrarily, negative points regarding harmonisation occur in the form of political distortions. Politicians and other pressure groups may pursue their own goals that can differ from the interests of citizens. Political economists therefore generally oppose harmonisation.<sup>70</sup>

One particular form of regulatory competition is vertical competition. With vertical competition, economic actors have the ability to choose whether they want to be governed by local rules and authorities or by more centralised, federal rules and authorities. In the EU, practically, this would mean a choice between being regulated by the member states or by EU rules and institutions. In theory, this should combine both advantages of legal diversity through regulatory competition (*i.e.* market pressure, political responsibility, and innovation) and harmonisation (*i.e.* simplicity, transparency, and cross-border applicability).<sup>71</sup>

#### Harmonisation of national space legislation

The ongoing doctrinal discussions concerning international responsibility *ex article VI OST* are a good example to introduce the topic of harmonisation of national space laws. While until recently these discussions could safely be treated in the realms of the doctrine, the growing number of adoptions of national space legislations demand a more pragmatic view of the issue. When implementing the international rights and duties into national space laws, states can freely interpret the wordings of the international space law treaties, which have led to divergent sets of national provisions and solutions taking into account the states' own economic, infrastructural, legal, and technological culture. But beyond the sovereign prerogatives of states, legal differences or gaps between national systems are to be avoided as much as possible. This is especially true when keeping multinational activities in mind; a flexible interface with foreign legislation is needed to provide a workable environment. Common regulatory conditions provide for legal certainty and comparable conditions for space operators in distinct states.<sup>72</sup> One way to accomplish this is to harmonise national space laws. Another less drastic way to do this is to enter into international agreements in order to fill those gaps and make sure that these provisions ensure technical and legal security for the space activities.<sup>73</sup>

When talking about harmonisation in Europe, it is common to consider harmonisation in the framework of the EU, as has been done in other areas. The EU could possibly make use of its legislative or regulatory powers to achieve harmonisation of the space regimes of its member states. A benefit for the EU of such regulatory intervention would be to reinforce the European

position in the world with regard to its space partners and/or competition. This would be in line with Europe's wish to have independent capabilities in all major areas of space as to be on par with other space fairing states or regions.<sup>74</sup>

#### Legality and forms of harmonisation

the form of article 189 of the Consolidated version of the Treaty on the Functioning of the European Union (TFEU), the EU has not been inactive in the field of space.<sup>75</sup> Already in its first Communication on "The Community and space: a coherent approach" of 1988, the European Commission found that

"there are many different areas in which the Community has exclusive or joint competences and ambitions, and on which space activities have or are likely to have a bearing: these include research, telecommunications, industrial development, agriculture, the environment, development and aid and regional development".<sup>76</sup>

For example, the deployment and exploitation of the EU's flagship project Galileo, a space-based navigation system, is based on the Trans-European Networks competence.<sup>77</sup> For the Global Monitoring for Environment and Security (GMES) programme, the related components are managed through the 7th Framework Programme for Research and Technological Development (FP7).<sup>78</sup> Other initiatives, such as the Directive Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), have been adopted on the basis of special competences like environmental policy.<sup>79</sup>

The space competence enshrined in article 189 TFEU is of a different nature. It somewhat falls in a sub-category of the shared competences under article 4 (3) TFEU, which states that the EU has competence to carry out activities in the area of space, but this exercise does not prevent member states from exercising theirs. So, *de facto*, it could be seen as a parallel competence or a support or coordination competence.<sup>80</sup> Of course, the EU should not violate the principle of subsidiarity when exercising its competence. This principle promulgates that centralised institutions (the EU) should only intervene when powers cannot be satisfactorily exercised by decentralised authorities (*e.g.* EU member states).<sup>81</sup> As a reminder, in the framework of the EU, it is also important to keep the principle of proportionality in mind.<sup>82</sup> EU legislative action should not go further than is necessary for the aim to be achieved. In the present case, this could be

interpreted as a certain safeguard for regulatory competition between member states.<sup>83</sup>

An interesting and clear wording in the new space competence is the fact that any harmonisation of laws and regulations of the member states is explicitly excluded, which was different in the first draft of the EU's space competence.<sup>84</sup> This shows that there was unwillingness among the member states to give up their sovereignty in the area of space. Member states thus have the possibility to elaborate a national space policy with independent priorities and programmes.<sup>85</sup>

However, the wording of the article ("establish the necessary measures") leaves enough possibilities for adopting other initiatives. Decisions, model laws, best practices, and benchmarks should, for example, still be possible.<sup>86</sup> This exclusion may prompt policymakers to search for alternatives for "hard," or "forced," harmonisation. For example, the space sector can be affected through regulations in the context of other policies that have a relation with the space sector, as has been done in the past (*e.g.* through the Trans-European Networks competence).<sup>87</sup> The use of these connected policy domains may enable the EU to harmonise regulations that impact space, in spite of article 189 (2) TFEU. The type of the competence determines the power for the EU in this regard.<sup>88</sup> The negative side of this is that it may lead to a confusing and decentralised regulatory regime for space.<sup>89</sup>

Secondly, EU member states may opt to use the "enhanced cooperation" mechanism in the framework of the EU, creating a European institutional framework with a competence in space, much like was done with the Schengen Area and the Economic and Monetary Union. Enhanced cooperation aims to facilitate the fostering of EU objectives and strengthen the integration process, allowing a minimum of nine member states to opt for such enhanced integration in policy areas that are not of exclusive competence.<sup>90</sup>

Thirdly, articles 114 and 115 TFEU may be used to "approximate" laws when actions in the context of the internal market have not been explicitly attributed. Recourse to these legal bases can only be done with the aim to ensure the functioning of the internal market. As stated in the *Tobacco Advertising II* case, article 114 TFEU can be used as an appropriate legal basis where there are differences between member state provisions that obstruct the fundamental freedoms and thus have a direct effect



on the functioning of the internal market (*e.g.* to combat forum shopping).<sup>91</sup> Depending on the kind of distortions on the internal market – and possibly some creativity – the EU could make a case as to adopt measures on the ground of these legal bases. A good example in this regard is the European Commission’s proposal for a Directive on the dissemination of earth observation satellite data for commercial purposes.<sup>92</sup> In the past, article 114 TFEU has already been used to initiate harmonisation in the coordination of frequency allocation, most notably in International Telecommunication Union conferences. This is dealt with by the Radio Spectrum Decision.<sup>93</sup>

Fourthly, when EU action is necessary to attain EU objectives and there is no competence provided to do so, article 352 TFEU grants the competence to adopt appropriate measures (excluding the possibility of harmonisation where harmonisation is prohibited, though).<sup>94</sup> Finally, the intergovernmental policy mechanism “open method of coordination” (OMC) may be used. The objectives of this instrument include encouraging cooperation by an exchange of best practices and the agreement of common targets and guidelines for member states. Mutual learning processes are put in place in order to have periodic monitoring, evaluation, and peer review.<sup>95</sup> Borrás and Jacobsson have analysed this form of governance, concluding that it is a method that can be used to create unity in diversity.<sup>96</sup> It is a pragmatic policy instrument to find the balance between the diversity of member states and common EU action. The OMC is a mechanism that does not entail legally binding measures. Given the discussion above, this instrument would fit the wish to have common EU action while still leaving the important remaining autonomy at member state level, amounting to a bottom-up approach and a process of collective self-coordination.<sup>97</sup> It could be used to establish coherent common practices and guidelines in, for example, the areas of authorisation, supervision, and technical evaluation in space activities.<sup>98</sup> As an end note, European states are, of course, not stopped to further cooperate outside the framework of the EU.<sup>99</sup>

#### Desirability of harmonisation

The interest in harmonisation lies in the fact that it facilitates international cooperation and fosters national industries, since private firms face fewer differences in legal and administrative requirements. It creates a fair and competitive environment for all

space operators.<sup>100</sup> Additionally, it also prevents the “flags of convenience” and forum shopping phenomena, which should be avoided.<sup>101</sup> Space entrepreneurs could take advantage of regulatory competition by creating a sequence of companies in order to avoid the (more strict) supervision of their home state. Because of the inherent danger of space activities, it is in the interest of everyone that the highest standards are adhered to. Space actors may be inclined to take decisions on the basis of regulations rather than on market conditions.<sup>102</sup> The discussed most important aspects for space operators in national space laws could serve as the elements to harmonise when taking the aforementioned arguments into account.<sup>103</sup>

Another argument in favour of harmonisation is the fact that it would be counterproductive if national space legislations would use their own, distinct terms and interpretations when implementing the international space law treaties. It would thus be optimal to make reference to the terms and definitions of the international space law treaties in the national space legislations. If done well, this minimises further issues regarding interpretation and *de facto* constitutes a form of “soft” harmonisation by means of consistency of the formulations.<sup>104</sup>

With regard to technical safety evaluation, there are two distinct interests to reconcile: states want to elaborate procedures in order to prevent any damage and being internationally liable, while the industry claims for less regulation to avoid disproportionateness with possibly less regulated foreign industries. It is nonetheless important that a proper, adequate assessment of technical safety is put in place, given the inherent risks of space activities. Regulatory competition can possibly be dangerous for safety and environmental standards if races to the bottom would occur.<sup>105</sup> As this assessment should ideally be done in the authorisation process, quality standards could be elaborated with standardisation organisations (such as the European Cooperation for Space Standardization) in order to agree on common goals in technical safety. These standards can be used when harmonising and when drafting national space laws, like it has been done in the UK.<sup>106</sup>

Another critical point in the discussion of regulatory competition vs. harmonisation may prove to be the insurance question. Ideally, national space laws should include compulsory insurance before

they are granted authorisation. This may be a crucial part in the financial assessment of aspirant space operators and will probably be considered thoroughly before the state of incorporation is decided. Differences in insurance requirements can possibly be decisive in the contemplation of which state will be chosen. So, to avoid forum shopping, some harmonisation can reduce such behaviour.<sup>107</sup>

One aspect that would definitely benefit from harmonisation is the registration of space objects. It is in the interest of all that space activities are adequately registered in national space registers, as well as in the registers on the international level. Harmonisation should oblige states to have all necessary information and parameters of their space activities contained in their national register. Additionally, states should make sure that the register is promptly updated when there are changes in the characteristics of their space objects.<sup>108</sup>

The prospect of building a competitive and competent European space sector can be an argument in favour of harmonisation. A competitive space sector serves the intent of Europe having independent access to space and may also contribute to the objective of having an innovation-based economy.<sup>109</sup> In an early Communication, the European Commission mentioned the shift to a market-based approach, the importance of developing a competent industry, the capability of having sustained independent access to space, and the need to create conditions for a space industry to compete worldwide. It saw the EU as the coordinator of authorisation conditions and procedures.<sup>110</sup>

However, an argument could be made that strong and far-reaching forms of harmonisation would not be welcome when taking into account the differences of EU member states and their industries in their involvement in space endeavours. For example, while a centralised single market authorisation or licensing system may seem attractive when keeping simplicity and transparency in mind, it ignores the major discretionary state powers of licensing, export control, and other regulatory aspects such as monitoring, which are currently exercised by the states themselves as part of their sovereign powers.<sup>111</sup> Following this, harmonisation should be understood in a looser way, to ensure compatibility between national space laws, rather than to create uniformity or similarity.

However, fundamental principles of the EU (*e.g.* free movement of goods and services and the freedom of establishment) should be guaranteed in any event.<sup>112</sup> In line with these principles, it would be beneficial to create mutual cross-border recognition of authorisations of space activities, as has been done in Australia's and the UK's national space laws.<sup>113</sup> Authorisation should not be required for activities authorised by another state, granted that the other state has a comparable, adequate, and qualitative authorisation procedure in place. It would simplify national procedures and lessen the administrative burden.<sup>114</sup> This mutual acceptance of licences would in turn create a favourable environment for international cooperation and for the private space industry.<sup>115</sup>

Harmonisation in the EU has a particular meaning in that it aims to abolish market barriers when basic principles of the internal market, such as the principle of free movement, common recognition, and workable competition, do not succeed in doing so.<sup>116</sup> However, this meaning seems difficult to consolidate with the association of space activities with state responsibility of the international space law treaties. In any event, history shows that this strict state responsibility is no obstacle for international cooperation. Additionally, with space being a specific strategic domain for states, they wish to strongly control space activities. In this regard, the internal market approach of the EU (*e.g.* through harmonisation) may not be the best approach for space activities.<sup>117</sup> Additionally, all space activities do not have the same market characteristics. For example, launch services belong to a particular and restricted market strongly linked to security concerns, where harmonisation with the traditional market-oriented concept would not fit in. By contrast, satellite and space-based services belong to very competitive markets with an increasing need for common standards. Here, harmonisation seems more at place.<sup>118</sup>

In a more general way, harmonisation may not be feasible or practicable due to the peculiarities of space activities. On a factual basis, there are a lot of differences in the actual territories where space activities are conducted: from thinly populated launch areas such as in Australia to more densely populated areas such as in the UK. Also differences in the interests of promoting (specific) space endeavours and differences in the legal systems can mean that states would rather want to have

discretion regarding the way they implement international obligations nationally.<sup>119</sup>

Vertical competition, when available, can *de facto* amount to harmonisation if private undertakings would opt for the centralised rules of the EU.<sup>120</sup> However, such regulation does not seem to fit the space sector. This becomes apparent when taking the example of the liability and insurance obligations. It would be illogical if private firms could choose the (possibly more beneficial) regime on EU level instead of the regime of their home state, because it is the member state that would be internationally responsible and liable in such a case, not the EU. Evaluation during the authorisation process is another example of the undesirability of this form of regulation. National authorities are often in a better place to assess and know the space activities being performed on their territories than authorities on the centralised level. It would be against safety and national interests to give space operators the choice to have this done at Union level. In short, national stakes are too prominent at this moment to justify vertical competition in the field of space.

## V. Conclusion

The existing body of international space law prompts state parties to enact national space legislation in order to cope with their obligations under these space law treaties and to organise their (non-)governmental space activities. Another reason for the adoption of national space legislation is the increasing participation of private actors in the commercialising space sector. Due to the increasing adoption of (diverging) national space laws, the possibility for regulatory competition arises.

The discussion of regulatory competition vs. harmonisation is relevant on both the doctrinal and pragmatic level for national space legislation. The EU's explicit space competence in article 189 TFEU prohibits the harmonisation of laws and regulations of its member states, but the particular wording of the article seems to leave enough possibilities to adopt other initiatives. These include the use of different legal bases, non-binding measures, the enhanced cooperation mechanism, the approximation of laws basis, the flexibility clause *ex* article 352 TFEU, and the OMC.

Focusing on the different forms of harmonisation of national space legislation, several benefits are identified. Reducing differences in legal and

administrative requirements prevents the flags of convenience and forum shopping phenomena. Mutual cross-border recognition of authorisations would also be useful in this regard, on the condition that the concerned states have comparable, adequate, and qualitative authorisation procedures. In the same way, the importance of liability and insurance questions may prove crucial if the goal is to avoid forum shopping. Another benefit is that the interpretation of international space law would be more consistent, which minimises interpretation issues. With the focus on the technical evaluation during the authorisation process, it would not be unfavourable to have some form of harmonisation of quality standards as well. The harmonisation of the registration of space objects is more straightforward: this should be applauded as to ensure that all necessary information and parameters of space activities are transparently available. On a more political level, harmonisation could assist the prospect of building a competitive and competent European space sector. All things considered, when pursuing harmonisation, the discussed most important aspects for space operators in national space laws could serve as aspects to harmonise.

Contrarily, other aspects of space activities contradict strong forms of harmonisation. Currently, states have discretionary powers with regard to licensing, export control, and other regulatory aspects. Space activities are also still (politically) sensitive on a national level, which is evident from the exclusion of harmonisation in the EU's space competence. Another argument against harmonisation is the diversity in market characteristics in the space sector: some of these markets would not profit from harmonisation.

International space law principles can be and have been interpreted freely by states that have enacted national space legislation. Given the sensitivity and the immense financial costs of space activities, it is only natural that states have indeed opted for an interpretation linked to their particular economic, infrastructural, legal, and technological cultures. While this diversity may prompt regulatory competition, several arguments and aspects favouring harmonisation can be identified.

## Author Biography

**Dimitri Linden** is a Belgian space enthusiast who recently graduated from the multidisciplinary Space Studies programme organised by the University of Leuven and Ghent University. Before, he obtained his Master of Laws degree at the University of Leuven. He currently works for Deloitte Belgium as a legal consultant, along with his position as part-time teaching assistant at the Institute for International Law at the University of Leuven. He presented his paper *The impact of national space legislation on private space undertakings: a regulatory competition between states?* at the 2015 International Astronautical Congress in Jerusalem, for which he was granted the Prof. Dr. I.H.Ph. Diederiks-Verschuur Award by the International Institute of Space Law.

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<sup>113</sup> Space Activities Act 1998 (Cth) section 11, 13, and 15; Outer Space Act 1986, c.38, s.3 (3).

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