European integration in space?

An analysis of the European space policy domain explaining the increasing role of the EU in this area

MASTER THESIS EUROPEAN GOVERNANCE

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Contents

Chapter 1: Introduction

The space efforts of European countries have traditionally been managed by the European Space Agency (ESA), an intergovernmental organisation focussed on the exploration of space and supporting European high-tech industry (Mai'a K., 2021). The European Union (EU) has also been active in the space domain to a lesser extent since the early 2000s. The EU has however rapidly increased its involvement in the domain since 2021, while also focussing more on the security and defence applications of space. This is an interesting development in the context of European integration given that the Member States for long preferred the intergovernmental ESA over the supranational EU when it came to cooperation in the space domain (Hörber & Stephenson, 2016). Member States have historically also been hesitant to collaborate on defence matters (Sabatino, 2022). This research aims to understand what can explain the expansion of the EU into the space domain. The thesis will attempt to explain this through a case study on the adoption of IRIS^2, which marked a significant shift towards more EU involvement in space. The case is analysed using Actor-Centred Institutionalism (ACI), a framework that combines institutional rules with the preferences and capabilities of actors to understand policy outcomes.

1.1 Increased presence of the EU

When looking at the involvement of the EU in the space domain I distinguish two periods of growing EU involvement. The first period, starting in the early 2000s marks the start of the EUs involvement in the space domain. During this period the EU launched the Galileo and Copernicus programmes in close cooperation with ESA. The first period ended in 2009 with space becoming a shared competence of the EU in the Lisbon Treaty (*Treaty of Lisbon*, 2007, Article 142).

After the Treaty of Lisbon, the process seemed to slow down however as no big initiatives were launched. In 2014 the Commission even had difficulty securing the required funding for its already existing space activities (Marta and Stephenson, 2016, p. 101). The second period started around 2021 and is still ongoing. This second period includes the founding of a dedicated EU agency for the space programme and the adoption of the secure communications satellite constellation: IRIS^2. Compared to the first period the second is characterised by an increased space budget, less dependence on ESA as a partner, and a stronger focus on security and defence applications (European Commission, 2023; Henry, 2020; Sigalas, 2016b, p. 247). This last period will be the focus of this thesis.

To show the significance of the increasing involvement of the EU I will discuss the second period in more detail. The first development that marked the increasing interest of the EU in space was the adoption of the European Space Programme Regulation in 2021. This regulation unites the different space components of the EU under one regulation, while also establishing a governance structure for the whole programme specifying the roles of the Commission, ESA, and the newly formed European Union Agency for the Space Programme (EUSPA) (EU Regulation 2021/696). This step of centralisation combined with the establishment of a dedicated agency provides a base for further EU involvement in the space domain. With the space programme also the new space budget for the Multiannual Financial Framework (MFF) of 2021-2027 was negotiated. The space budget increased to 14,8 billion euros (European Commission, n.d.-a), 35% more than the previous MFF (2014-2020).

In 2023 the EU adopted a new flagship initiative called IRIS^2, a satellite constellation aimed at providing the EU institutions and the MS governments with worldwide secure communications capabilities (European Commission, n.d.-b). The adoption of this constellation constitutes a long-term commitment and not only requires a permanent increase of the EU space budget but is also a further step towards European integration as the MS now entrust the EU with organising the secure connectivity capabilities for them, a capability that is of strategic importance to the MS.

In 2023 the Commission and the High Representative also published the European Union Space Strategy for Security and Defence (EU SSSD) (European Commission, 2023b), which was subsequently approved by the Council and the Parliament in the same year (Council of the European Union, 2023; European Parliament, 2023b). The strategy aims to better protect space systems and maximise their use for security and defence. To this end the EU SSSD proposed to create an EU space law, which the Commission is currently working on (Stefoudi, 2024), and a governmental service for earth observation, which is also being worked on and will provide earth observation data specifically for governmental and military use (European Commission, 2023b; Selding, 2024). This strategy constitutes a further step of European integration in the fields of space policy as well as defence policy.

As shown, the EU has strengthened its presence in the space domain substantially since 2021. The new initiatives of the EU are thereby more focussed on security and defence than before. This is a significant accomplishment as all three EU institutions (Commission, Parliament, and Council) need to support it. Of the three institutions the Council, representing the Member States, is of particular interest. Why would Member States agree to shift more competencies to

a supranational institution like the EU, thereby decreasing their autonomy? The second period is also much more focussed on security and defence an area where historically not much European integration has taken place (Sabatino, 2022). This makes it an interesting case for studying European integration, but also for studying the European space domain itself. The new reality where the EU is a strong player that is focussed on security and defence changes the landscape and other actors have to adapt. During the first period, the EU worked in close cooperation with ESA, however, ESA as an organisation is focussed on the peaceful use of outer space and is not meant for developing security and defence applications (ESA, 2019; Hörber, 2016; Mai'a K., 2021). What does the increased focus on security and defence mean for the position of ESA? Also, Member States like Germany and the Scandinavian countries prefer to see Europe retain a more civilian orientation to space activities (Darnis et al., 2011, p. 86). How can this be reconciled with the developments in this second period?

Almost all literature on the topic has focussed on the first period (Hörber, 2016; Köpping Athanasopoulos, 2016; Marta & Stephenson, 2016; Oikonomou, 2016; Sigalas, 2016b). As shown, the second period was distinctly different from the first. Therefore, we cannot assume that these new developments can be explained by the existing literature. This leaves a gap in our knowledge.

1.2 Research question

The knowledge gap that was established leads to the following research question:

What explains the increasing role of the EU in the space domain since 2021?

This research question will be answered through the following sub-questions:

1. *What is the institutional setting in which EU space policy is adopted?*
2. *What were the main points of contention between actors during the adoption process of IRIS²?*
3. *How did the actors within the institutional setting affect the policy outcome of IRIS²?*

This thesis attempts to answer the research question using Actor-Centred Institutionalism (ACI). ACI uses the self-interested rational behaviour of actors and the institutional rules and processes guiding the behaviour of these actors to explain policy outcomes (Scharpf, 1997, p. 16).

The first sub-question therefore asks who the key actors are that influence EU space policy and what the institutional rules and processes are that affect how EU space policy is created. This

question will be answered at the end of the theoretical chapter where ACI is applied to EU space policy making. To allow for a more in-depth analysis I will answer the other two sub-questions within the context of my case study on the adoption of the IRIS^2 programme.

The second sub-question which goes into the adoption of IRIS^2, asks what the main contentious issues were during the IRIS^2 negotiations. By focussing on the disagreement between the key actors, the research can be narrowed down by only analysing the key points that were most likely to affect the final policy outcome. The contentious issues that are identified here will provide the subcases that will be analysed using ACI. This second sub-question will be answered at the start of the analytical chapter.

The third question takes the contentious issues, identified by sub-question 2, and will apply the different steps of the ACI framework to each of the issues. Based on this, hypotheses will be formulated on how these issues will impact the policy outcome. Subsequently, the hypotheses will be tested against the real policy outcome which is the adopted regulation establishing the IRIS^2 programme. This sub-question shows what the preferences and capabilities of the key actors are and how the institutional setting influences how these preferences are reflected in the final policy. This sub-question will make up the majority of the analytical chapter.

In the conclusion, I will reflect on the answers to all three sub-questions and discuss how they explain the increasing role of the EU in the space domain.

1.3 Scientific relevance

By analysing the increasing role of the EU in the space domain I will contribute to multiple debates in the literature.

First, the thesis contributes to the debate concerning the role of the Commission and the Member States. Here, two grand theories of European integration, namely neofunctionalism and liberal intergovernmentalism, disagree. Neofunctionalism emphasises spillover effects as a mechanism driving integration and attributes substantial power to the Commission as a supranational actor (Niemann, 2021, p. 116). Liberal intergovernmentalism (LI), however, does not see the Commission as an influential actor and does not regard spillover effects as a driving mechanism. Instead, LI focuses on the Member States as the main actors who decide through interstate bargaining which level of integration is desirable (Moravcsik, 1998). According to LI, the interests of producers (in this case the space industry) play a big role in the national preference formation (Moravcsik, 1998, p. 36). When researching the adoption of the EU satellite programme Galileo in the early 2000s Köpping Athanasopoulos (2016) found that the

Commission was influential and that spillover effects played an important role in the adoption. This is in line with the expectations of neofunctionalism (Köpping Athanasopoulos, 2016, p. 67). This master thesis researches the role of the Commission and the Member States in the adoption of IRIS^2, this will provide insight into how well these two theories can explain the recent case of European integration in the space domain.

This thesis can also contribute to the debate on the evolving role of the European Parliament. Some scholars see the Parliament as the main beneficiary of EU inter-institutional politics (Hix, 2002; Stacey, 2003) and each of its wins as setting the EU on a longer-term course towards parliamentarisation (Héritier et al., 2019). Other scholars are critical however and emphasise the strong role of the Council which is limiting the Parliament (Bauer et al., 2015; Bressanelli & Chelotti, 2020; Crum, 2023). Although there is no agreement on the level of influence of the Parliament, there is a general consensus that a stronger Parliament would be preferable as it would reduce the democratic deficit of the EU (Nicoli, 2020, p. 22). It is therefore useful to know if the Parliament plays a strong role in space policy making. Sigalas (2016a) showed that the Parliament is a strategic actor in the field of space policy and that the Parliament supports more EU involvement in space. Nonetheless, he mentioned that a comparative analysis involving the Commission and the Council was required to determine the true extent of the Parliament's influence (Sigalas, 2016a, p. 80). This thesis answers Sigalas's call by comparing all three institutions and the role they played in the adoption of IRIS^2. It thereby contributes to the literature on the strength of the Parliament, in particular in the field of space policy.

This thesis will also contribute to the debate concerning the behaviour of the MS in the Council. Scharpf states the behaviour of MS can best be explained by the 'logic of consequentiality'. This logic states that decisions are made based on the expected consequences of decision options in terms of a given set of preferences (Dewulf et al., 2020, p. 1). Lewis (2005) and Schreurs (2023) on the other hand argue that the 'logic of appropriateness' best explains MS behaviour. The 'logic of appropriateness' refers to actors acting according to 'internalized prescriptions of what is socially defined as normal, true, right, or good, without, or despite calculation of consequences and expected utility" (March & Olsen, 2011, p. 480). By analysing the positions of the different MS and comparing them with the policy outcomes, this thesis hopes to provide insight into which logic can best explain the behaviour of the MS in the case of space policy.

1.4 Societal relevance

Space is becoming increasingly important for our society (Council of the European Union, 2024a; European Space Policy Institute & Boston Consulting Group, 2023). The EU space initiatives already provided Europeans with navigation and earth observation data and now secure communication capabilities are being added. With the EU space programme taking up a larger proportion of the EU budget and with the space applications having an increasing impact on our everyday lives, it is valuable to understand how this kind of policy is created. Especially because space policy is not politically salient, the interests that shape this type of policy are more obscure. This thesis will, first of all, provide insight into the space policy domain by describing the key actors and their preferences thereby helping policymakers and others involved in space policy or EU policy more generally to make better-informed decisions.

The second development this thesis provides insight into is the EU's increasing involvement in security and defence policy (Cellerino, 2023; Haroche, 2020). The focus on strategic autonomy has increased and the war in Ukraine has accelerated this trend (European Defence Agency, 2023). The increasing involvement of the EU in security and defence could have big consequences for the role of the EU and space is one of the policy areas where this development has manifested itself. The publication of the EU SSSD last year shows how the EU wants to use the space domain for security and defence applications (European Commission, 2023b). My research gives more insight into the move of the EU towards security and defence applications and also goes into the different preferences Member States have on this topic.

The third debate that my thesis contributes to regards the relationship between ESA and the EU. With the EU expanding its role in the space domain the relationship between ESA and the EU is a topic of discussion among policymakers (Foust, 2021; Sigalas, 2016b, p. 246). ESA was initially supportive of the increasing role of the EU as it meant more funding for space (Sigalas, 2016b, p. 246). However, ESA and the EU have experienced tensions due to duplication of efforts, governance conflicts and differing priorities (Foust, 2021; Franzoso, 2024; Mai'a K., 2021). Since most EU MS are also ESA MS this is a topic that many MS also have to deal with internally as they are represented in both organisations. This thesis will show the role of ESA and the EU in the most recent big addition to the EU's space efforts: IRIS^2, thereby providing an update on how the roles of the EU and ESA are evolving. Given the importance of both institutions in the European space domain, this information is valuable for policymakers and others involved in the space sector.

Chapter 2: Theoretical framework

2.1 Theories of EU decision-making

To answer the question of why the EU has become more active in the space domain we need a theoretical framework that explains EU policy making. There are several theories and frameworks that aim to explain this. First, as mentioned in the introduction, there are the grand theories of European integration like neo-functionalism (Haas, 1958) and intergovernmentalism (Moravcsik, 1998). The former explains the gradual increase of EU competencies through functional and political spillovers, while the later emphasises the role of interstate bargaining between the Member States to explain further integration or the lack thereof. Both these theories focus mainly on the big shifts in European integration, usually treaty changes, and are therefore too broad and abstract for fields like space policy which is characterised by its low political salience. The findings of the research can, however, still be relevant for these grand theories.

Neo-functionalism and Intergovernmentalism explain why the EU institutions are set up the way they are but they are less good at explaining how decisions are made within those institutions. This is where 'new institutionalism' becomes relevant, a theoretical framework aimed at explaining the influence of institutions on decision-making. New institutionalism is however not one theory, but rather a term describing three distinct theoretical frameworks all aimed at understanding the role that institutions play in the determination of social and political outcomes (Hall & Taylor, 1996). The three frameworks Hall and Taylor distinguish are historical institutionalism, rational-choice institutionalism and sociological institutionalism. Where historical institutionalism focuses on how path dependency and unintended consequences shape institutions, Rational-Choice Institutionalism (RCI) highlights the strategic behaviour of actors within institutional constraints. Lastly, sociological institutionalism broadens the scope of institutions and emphasises the role of symbols and moral templates in guiding human action (Hall & Taylor, 1996).

This research seeks to understand why the EU has increased its activity in the domain of space policy recently. As discussed in the introduction we are presented with a situation where the Member States, the Commission and ESA have competing interests and must settle these differences in interests through the institutions that are already in place. On a more abstract level, we are dealing with actors who need to settle their differences in preferences through institutional arrangements. RCI theories provide a good framework for explaining these kinds of situations. This paper will therefore use a type of RCI framework called Actor-Centred

Institutionalism (ACI). ACI is a framework that uses the preferences and capabilities of actors within a certain institutional setting to explain policy outcomes. The framework consists of three main steps. First, the preferences and capabilities of actors are determined. Second, the actors are put in an 'actor constellation' which is a game matrix showing the payoffs for each actor given different policy outcomes. Third, the process through which decisions are taken (the mode of interaction) is added to the game matrix to see how this affects the policy outcome (Scharpf, 1997, p. 44). ACI is heavily influenced by RCI, both frameworks focus on the choices of self-interested rational actors within institutional constrains. ACI is however more flexible than RCI as it includes both formal and informal institutional rules and has a less strict definition of rationality (Scharpf, 1997, p. 39, 108).

The flexibility of ACI is also shown by the variety of frameworks and concepts it has been combined with. So have Sonnhoff et al. (2021) combined ACI with path dependency, a prominent concept in historical institutionalism, to understand the environment in which German forest management cooperatives operate. ACI has also been combined with other frameworks such as the advocacy coalitions framework (Hughes & Meckling, 2017), network analysis (Kriesi & Jegen, 2000), and the science-policy interface framework (Koese et al., 2022). ACI is a versatile framework that has been applied to a wide variety of fields such as energy policy (Hughes & Meckling, 2017; Koese et al., 2022; Kriesi & Jegen, 2000), forest management (Baycheva-Merger et al., 2018; Sonnhoff et al., 2021), agricultural policy (Coleman, 2001), rural development (Dobšinská et al., 2012), the labour market (Van Lieshout, 2008) and infrastructure (Rotter et al., 2016).

Although ACI has, too my knowledge, never been applied to space policy this is not a problem due to the versatility of the ACI framework. The versatility of ACI also makes it more abstract, meaning that the framework as described by Scharpf has, on its own, little explanatory power. To make the framework useful for analysis we need to take the assumptions of ACI and apply them to the environment of European policy making, based on that we can then construct theoretical expectations which can subsequently be tested. In the next part if the theoretical chapter I will further explain ACI before applying the framework to European space policy making.

2.2 The foundations of Actor centred institutionalism

Actor-centered Institutionalism (ACI) was developed by Scharpf and Mayntz and is explained in the book 'Games real actors play' (Schapf, 1997). Actor-centered institutionalism aims to explain policy outcomes by focusing equally on the strategic actions of rational actors and the

influence of institutional structures and norms (Scharpf, 1997, p. 34). To understand ACI better three concepts need to be clarified: rationality, actors and institutions.

2.2.1 Rationality

Rationality is a hotly debated topic amongst academics with diverging views on which model of rationality is best at modelling the behaviour of organisations and individuals. I will limit myself here to one topic of the debate: can political actors be considered rational or is their rationality 'bounded'?

The theory of Subjective Expected Utility (SEU) underlying neo-classical economics postulates that rational actors choose amongst a fixed set of alternatives, with known probability distributions for each, and in a way that maximizes their utility (Simon, 1990, p. 15). On the other hand the concept of 'bounded rationality' states that, due to the computational limits of the human brain and a lack of information, we cannot expect that individuals always choose the option that maximises their utility (Simon, 1990, p. 16). Scharpf leans more towards this concept of bounded rationality and believes that outside of the economic zone, the rational-actor paradigm has almost no predictive power unless institution-specific information for the specification of actor preferences and capabilities is added, which is therefore what ACI aims to do (Scharpf, 1997, p. 21, 22). In line with Scharpf, this research will not assume actors to be perfectly rational but rather that their rationality is bounded.

2.2.2 Actors

Although ACI can be applied to individual actors ACI gives much attention to 'composite actors' as a unit of analysis. Composite actors are broadly defined as individuals cooperating with the intend to create a joint product or to achieve a common purpose (Scharpf, 1997, 54). Scharpf utilises composite actors as a unit of analysis to avoid having to analyse every individual involved in the policy-making process. By grouping individuals into composite actors, the analysis is simplified. Scharpf distinguishes two types of composite actors: collective actors and corporate actors. The main difference between them is that collective actors rely heavily on member preferences while corporate actors are more hierarchical and have a higher degree of autonomy from the ultimate beneficiaries of their actions (Scharpf, 1997, 54). The higher level of autonomy allows corporate actors to achieve higher levels of effectiveness and efficiency compared to collective actors that directly rely on the preferences of their members (Scharpf, 1997, p. 57).

2.2.3 Institutions

Scharpf defines institutions not only as formal rules but also includes social norms that guide behaviour (Mayntz & Scharpf, 1995; Scharpf, 1997, p. 39). Scharpf also acknowledges that institutions can be intentionally created and changed by specific actors and that they influence but do not fully determine behaviour. The term 'institutional setting' serves as a shorthand term to describe the most important influences on those factors that drive the explanations: actors with their preferences and capabilities, actor constellations and modes of interaction (Scharpf, 1997; Van Lieshout, 2008). Institutions serve to reduce variance in behaviour by providing incentives and constraints, and they also shape the identities and evaluations of actors. Composite actors, formed by institutional rules, depend on these rules for their existence and operation. The institutional setting influences actors' options and preferences, but it does not deterministically dictate their behaviour. Instead, it offers a framework within which actors make strategic choices. ACI is therefore not a theory but rather a framework of how to conduct empirical analyses, with the aim of explaining observable action and policy outcomes.

2.3 The ACI framework

Now that the basic assumptions and concepts of actor-centered institutionalism are clear I will now describe how the framework can be applied to explain policy outcomes. As shown in Figure 1 the ACI framework consists of three parts that are all affected by the institutional setting. The first step is to determine the preferences and capabilities of the involved actors. The next step is to construct actor constellations based on the preferences of the actors. An actor constellation shows the degree to which the preferences of the different actors are compatible or incompatible with one another (Scharpf, 1997, p. 72). The actor constellation thus describes the level of potential conflict. The last step adds the mode of interaction which describes how decisions will be made and thus how the potential conflict will be solved (Scharpf, 1997, p. 46).

All of the steps mentioned before are affected by the institutional setting. Institutions can determine the capabilities of actors and the mode of interaction between the actors. When applying ACI it is therefore important to have a thorough understanding of both the actors involved and the institutional setting in which policy is made (Scharpf, 1997, p. 39). The individual steps will now be explained in further detail.

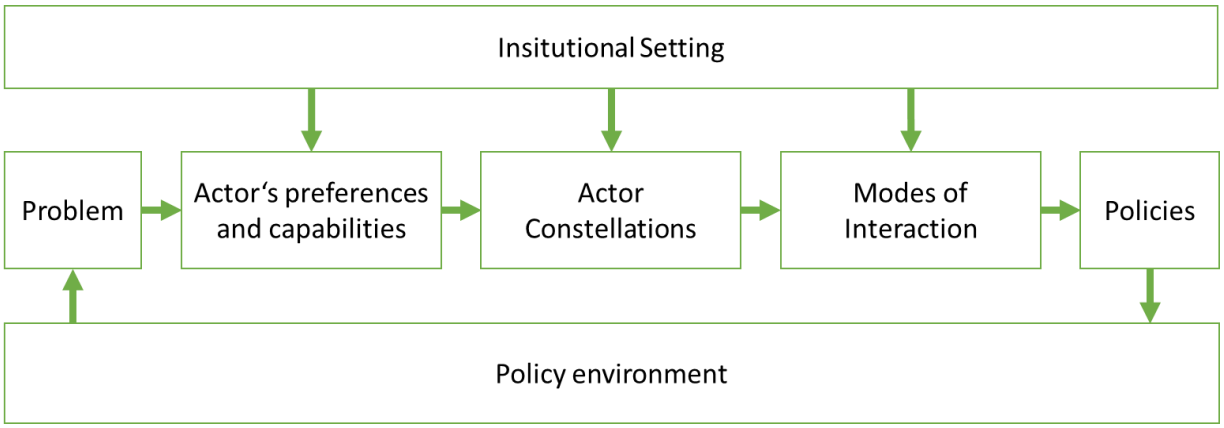


Figure 1: The domain of interaction-oriented policy research, based on Scharpf (1997, p. 44)

2.3.1 Preferences and capabilities

2.3.1.1 Preferences

ACI assumes that actors act in line with their 'preferences'. ACI disaggregates preferences into four components: interests, norms, identity and interaction orientations (Scharpf, 1997, p. 63). The first component of actor's preferences, interests, is the most important, it describes the basic preference of actors for self-preservation, autonomy and growth. This component can explain why the Commission wants to increase its competencies and why the Member States want to limit this. The second component, norms, refers to the preference of actors to act in line with the shared normative expectations of actors with which they interact. The Parliament for instance is expected to represent the European citizens, while the Council is expected to represent the national governments. In many cases, self-interest and norms together still do not provide the actor with clear-cut guidelines for which action it should take. Therefore, the third component of preferences, identity, describes the ability of actors to selectively emphasise certain aspects of self-interest or certain norms allowing them to simplify their own choices and reducing the uncertainty for other actors.

The fourth component, interaction orientation, goes beyond the individual level and regards the relational level. This means that the preferences can change depending on the actor that is being interacted with. The interaction orientations allow for a subjective redefinition of the interest constellation, influencing how actors value gains and losses in relationships (Scharpf, 1997; Van Lieshout, 2008). Scharpf distinguishes five different interaction orientations: individualism, solidarity, competition, altruism, and hostility. Maki et al. adds masochism, sadomasochism, and martyrdom to the list (1979, p. 211). These are however unlikely to occur in real-life situations as Maki et al. admit. Lorenz (2011, p. 410), who uses interaction orientations to research constitutional negotiations, proposes only four ideal types that closely

resemble Scharpf's orientations of individualism, competition, solidarity and altruism. According to both Scharpf and Lorentz, an individualist interaction orientation means that actor X only cares about his own absolute gains. A competitive interaction orientation on the other hand means that actor X focusses on maximizing his relative gains compared to Y. An example of this is two countries involved in an arms race, here the absolute number of arms does not matter but rather the difference in the number of arms each country possesses. Both the individualist and competitive orientation are considered a bargaining mode of behaviour where self-interest is central (Lorenz, 2011, p. 410). Solidarity, or 'co-operation' as Lorenz calls it, means 'the willingness to arrive at joint decisions and to at least partially abstain from maximizing self-benefit' (Lorenz, 2011, p. 410). Altruism means that an actor is willing to make compromises for the benefit of other actors. Solidarity and altruism occur in an arguing mode of behaviour. The last interaction orientation of Scharpf is the 'hostile' interaction orientation, which Lorenz did not include in his research. The hostile orientation means that actor X only perceives a loss to actor Y as a gain and is even willing to incur a loss himself if this means that actor Y loses as well.

With the addition of norms, identity, and interaction orientations ACI goes further than other ration-choice-based theories when theorizing about the preferences of actors. The reason for adding components beyond basic self-interest is to deal with the complexities of empirical research, where basic self-interest is often not enough to understand the preferences of actors (Scharpf, 1997, p. 63). Although the concepts of norms and identity are added, ACI is still a rational framework explaining the actions of actors trough their preferences and capabilities.

How ACI determines preferences has been criticized in the past. Etienne and Schnyder (2010) argue in their preprint that ACI could adopt Goal Framing Theory (GFT) as this would provide a better account for individual action. GFT identifies three different goal frames: hedonic, gain, and normative which influence how individuals make decisions (Etienne & Schnyder, 2010, p. 10). Although this could indeed be a valuable addition to ACI for explaining individual action the authors do not specify how GFT can be applied to composite actors consisting of many individuals like the Commission and MS governments. Since my research focusses on composite actors, I will therefor continue with the model of Scharpf which is less data intensive.

2.3.1.2 Capabilities

Capabilities must be defined in relation to specific outcomes. This term encompasses all resources that enable an actor to influence an outcome to varying extents. These resources include personal attributes like physical strength, intelligence, or human and social capital,

physical assets such as money, land, or military power; technological skills; and privileged access to information. In the context of policy research, the most critical resources are those created by institutional rules that define competencies and grant or restrict rights of participation, veto, or autonomous decision-making in certain aspects of policy processes (Scharpf, 1997, p. 43).

2.3.2 Actor constellations

Actor constellations refer to the configurations of actors involved in policy interactions, encompassing their preferences and capabilities (Scharpf, 1997, p. 69). By employing game-theoretic representations, diverse real-world constellations can be described and compared, revealing empirical regularities and levels/types of conflict among actors. In this step of the analysis, one will use the information gathered about the preferences of the actors and put them in a game matrix (Scharpf, 1997, p. 73). A game matrix is a table representing the gains of the actors given different options. The choices that actors can make are listed along the rows and columns and each cell in the matrix shows the payoffs for each player based on their chosen strategies. When the game matrix is filled in, it becomes possible to see if there are dominant strategies leading to Nash equilibria. Nash equilibria show the outcome of a game. They are determined by identifying the cell(s) where no player can unilaterally change their strategy to achieve a better payoff. In these equilibria, each player's strategy is the best response to the other's strategy, ensuring stability since no player has an incentive to deviate (Scharpf, 1997, p. 100). A Nash-equilibria is Pareto efficient when there is not other outcome that would increase the total payoffs without making one of the actors worse off.

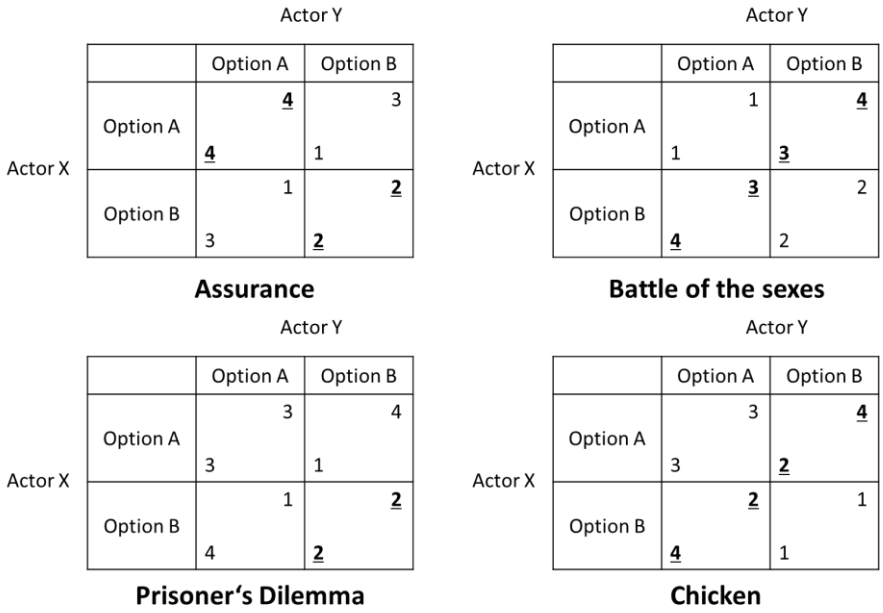


Figure 2: main four types of games, based on Scharpf (1997, p. 75)

Figure 2 shows the main types of games: assurance, battle of the sexes, prisoner's dilemma and chicken. The Nash equilibria of each game are shown as bold underlined numbers. Each game will be explained briefly.

- In a game of assurance, two players choose between cooperation or independent action. The highest payoff is achieved through cooperation, but there's a risk if the other player chooses independently. The Pareto efficient Nash equilibrium is when both actors cooperate. There is, however, also a Nash equilibrium where both actors choose independent action (Scharpf, 1997, p. 73).
- In a battle of the sexes scenario, two players prefer being together but have different individual preferences. The best outcome for each is aligning with their own preference, yet being together in either preference is better than being apart. Nash equilibria occur when each player follows the other's preference, or they randomize between the two (Scharpf, 1997, p. 74).
- In a game of chicken, two players must choose between a safe option or a risky one that leads to a high reward if the other player opts for safety. The worst outcome occurs if both choose the risky option. Nash equilibria exist when one player chooses safety and the other chooses the risky option (Scharpf, 1997, p. 75).
- In the case of a prisoner's dilemma, two players decide between cooperation or self-interest. Cooperation provides a moderate benefit, while mutual self-interest leads to worse outcomes. The dominant strategy is self-interest, resulting in a Nash equilibrium where both players act in self-interest (Scharpf, 1997, p. 77).

When researching policy making one can map the payoffs of the actors in a game matrix to show the payoffs for each policy outcome. The standard games explained above function as a shorthand making it easier to see what the outcome will be. In the case of assurance and battle of the sexes, actors are incentivised to cooperate. Although the battle of the sexes game includes a problem of distribution, cooperation is still the most beneficial outcome for both actors. The prisoner's dilemma and the game of chicken on the other hand describe a situation where cooperation is disincentivized. In the case of the prisoner's dilemma, both actors have an incentive to defect while in the game of chicken, actors have an incentive to escalate as unilateral de-escalation would lead to a relative loss.

Although the game matrixes can help see which policy outcomes are possible, they might not be enough to explain or predict the policy outcome as several games have two Nash equilibria. To see which option is most likely to be chosen ACI has a third step, the modes of interaction.

2.3.3 Modes of interaction

The term 'Mode of Interaction' refers to how decisions are made. Scharpf distinguishes four main modes of interaction: unilateral action, negotiated agreement, majority vote, and hierarchical direction (Scharpf, 1997, p. 17).

- Unilateral action occurs when a single actor makes decisions independently without needing consent from others (Scharpf, 1997, p. 97).
- Negotiated agreement involves multiple actors discussing and compromising to reach a mutually acceptable decision (Scharpf, 1997, p. 116).
- Majority vote means decisions are made based on the preference of the majority of actors involved (Scharpf, 1997, p. 151).
- Hierarchical direction involves decisions made by a higher authority with lower levels expected to comply (Scharpf, 1997, p. 171).

Modes of interaction in policy processes are shaped by institutional design. While actor constellations describe static pictures of actors involved in policies, actual interactions vary widely in character. By prescribing which modes of interaction can be employed the institutional setting determines the kinds of policy outcomes that are possible (Scharpf, 1997; Van Lieshout, 2008). Under negotiated agreement the actor least likely to agree has, for instance, disproportionate power while this power would disappear under majority vote.

2.3.4 Falsifiability of ACI

A problem with ACI is that it can be hard to falsify. An example of this is when Scharpf and Schreurs both used ACI to argue for opposite positions. While Scharpf used ACI to explain why common European legislation in the fields of social welfare and industrial relations is unlikely to pass (Scharpf, 1997, p. 81), Schreurs (2023) argued that ACI can explain the progress that the EU has made in these policy areas. Although this shows the versatility of ACI as Schreurs and Scharpf can disagree while both using ACI, it also calls for caution. Green and Shapiro criticized applications of rational choice theories for post hoc or retroductive theorizing (Pollack, 2006). ACI as a framework leaves the freedom to explain a wide range of outcomes by emphasising different parts of the framework. While this does not disqualify ACI it does make it hard to falsify. It is therefore important to be wary of explaining developments post hoc using a framework that can explain almost anything depending on the input values. To partially counteract this, I will use ACI in this research with a focus on self-interest since this is at the core of the approach, this will narrow down the outcomes that can be explained by ACI.

Secondly, I will construct falsifiable hypotheses based on ACI and case-specific data before comparing them to the actual policy outcome.

2.4 Applying ACI to the European space domain

As stated earlier the framework of ACI is versatile but abstract. To use the framework in a useful way it has to be specified to the situation of European space policy making. Many of the variables that are needed to apply ACI will become clear during the analysis. However, one important aspect of ACI is already known: the institutional setting. This section will describe the institutional setting of EU space policy-making including the key actors thereby answering the first sub-question of this thesis. Subsequently, this section will also formulate theoretical expectations on how the institutional setting is likely to affect policy outcomes.

2.4.1 Institutional setting

The institutional setting in ACI can influence the outcome in two main ways. First by describing which modes of interaction apply (Scharpf, 1997, p. 17), and second by giving certain capabilities to specific actors by granting them rights and competencies (Scharpf, 1997, 43). When describing the institutional setting I will therefore focus on these two aspects.

2.4.1.1 Ordinary legislative procedure

Since EU space policy is almost exclusively adopted through the Ordinary Legislative Procedure (OLP) this forms the base for the institutional setting of EU space policy. In the OLP the Commission has the right of initiative while the Parliament and the Council can make amendments. To pass a regulation both the Parliament and the Council need to agree with each other (Council of the European Union, 2023a) meaning that decisions between the Council and the Parliament are made through negotiated agreements (European Parliament, n.d.).

Internally the Parliament and the Council have different modes of interaction. The Parliament often decides by simple majority (majority of the cast votes, not counting abstentions) (European Parliament, n.d.). The Council on the other hand decides by qualified majority which means that 55% of the Member States need to agree. These MS also need to represent at least 65% of the EU population (Council of the European Union, 2024b). To balance the power of the larger MS somewhat there is an additional rule which states that a blocking minority needs to consist of at least four MS (Council of the European Union, 2024b). Still, a blocking minority can be relatively small as less than 15% of the MS, if they are large MS, can form a blocking minority. The mode of interaction in the Council is therefore closer to negotiated agreement than majority vote.

2.4.1.2 Effect of modes of interaction

The high threshold in the Council affects the decisions that can be taken. Cooperation is possible under these circumstances even when we assume that the actors involved are rational, self-interested and have a competitive interaction orientation. The prerequisite however is that every actor perceives that they gain from cooperating (Scharpf, 1997, p. 116). If a small group of actors perceives that they would lose as a result of the agreement they can veto it. Because of the possibility of a veto, ACI assumes that package deals and side payments are often necessary to make sure that also the actors least likely to agree to the proposal will not use their veto. This gives the actors least likely to agree, considerable bargaining power (Scharpf, 1997, p. 140). This dynamic exists within the Council and between the Council and the Parliament.

The Parliament decides by majority vote which, unlike negotiated agreement, does not require all actors to perceive cooperation as a gain. In the case of the Parliament, only a simple majority needs to agree for a decision to be made (Scharpf, 1997, p. 155). This significantly decreases the bargaining power of the actor who is least likely to agree. This actor could easily end up in a position that it considers as a loss. This affects how actors behave since side payments and package deals are not as important since small minorities can be overruled.

When we apply this to the ordinary legislative procedure, we would expect concessions between the Council and the Parliament until both institutions perceive the policy outcome as a gain. Within the Parliament and the Council, this is not necessarily the case however since single actors can be overruled by a majority. We would however expect more concessions within the Council compared to the Parliament considering their different voting rules. This difference in voting rules can be an advantage for the Council when the legislation is controversial. Because it is harder for the Council to come to an agreement its threat to veto the agreement is more credible.

The two other modes of interaction: unilateral action and hierarchical direction play a less prominent role on the OLP. However, when it comes to investment in the space sector this is something that MS can also do unilaterally. Perhaps not as effective as the EU or ESA but especially for the larger MS unilateral action is an alternative (Krempl, 2024). Hierarchical direction is used internally in the Commission to determine what kind of proposals are sent to the Council and Parliament.

2.4.1.3 Rights granted by institutions

When it comes to space policy there are some rights and competencies granted by the institutional setting that are important for the relative power of the actors involved. The most important one is the right of initiative which is held by the Commission (European Commission, n.d.-c). This right gives the Commission strong agenda-setting power, being able to decide what the Parliament and Council can and cannot adopt. With the right of initiative also comes the right to revoke a legislative proposal when it is being discussed by the Council and Parliament. Because of this, I expect the Commission to always be in favour of the adopted legislation since it would not propose legislation it doesn't agree with and would revoke proposals when they are amended to the extent that the Commission doesn't support them anymore.

Also, the veto power given to both the Parliament and the Council are competencies given by the institutional setting. In the case of the Parliament, this competence was only granted in 2009 with the Lisbon Treaty (European Parliament, n.d.). Based on the institutional setting I therefore expect that the Parliament holds similar power as the Council when a proposal is not particularly controversial. The clarification that the proposal cannot be controversial is necessary, as the Council has a more credible threat to veto a proposal if it is controversial, due to its higher voting threshold.

The Lisbon Treaty also turned space policy into a shared competence giving the EU more freedom to make legislation in this field (Marta & Stephenson, 2016, p. 98). Based on this competence I expect the Commission to propose more ambitious space policies than it did before the Treaty.

2.4.1.4 The five key actors within the institutional setting

First of all, the OLP provides three actors: the Commission, the Parliament and the Council. These are the only actors that are directly involved with EU space policy making and each of these actors needs to agree before a policy can be adopted. The literature also emphasises the importance of two other actors: ESA (Hörber, 2016; Mai'a K., 2021) and the space industry (Oikonomou, 2016, 2023). ESA and the industry have a central role in the European space domain and the EU is dependent on both actors for the implementation of the EU space programme.

When applying ACI's typology of actors to the institutional setting of the EU space policymaking it becomes clear that all actors are composite actors as they consist of many individuals making decisions together. The Commission is a corporate actor as it has a

hierarchical organisation. The Parliament is a collective actor consisting of individual MEPs who are mainly driven by their position on the left-right dimension through their party groups although they also represent their national interests (Hix et al., 2006). The Council is also a collective actor consisting of the MS each representing their national interests. Also, the space industry is a collective actor, as it consists of individual companies driven by their aim of profit maximisation. ESA is a corporate actor, however not to the same extent as the Commission. This is because ESA is an intergovernmental organisation with its MS holding substantial power.

Corporate actors are, according to ACI, more effective and efficient than collective actors due to their higher level of autonomy (Scharpf, 1997, p. 57). Based on this I expect the Commission to be the strongest of these five key actors, all else being equal.

2.4.1.5 Expected interaction orientations of the key actors

Scharpf describes multiple possible interaction orientations in his ACI framework ranging from individualistic to solidaristic. Although Scharpf leaves room for solidaristic orientations he also states that in a competitive environment with conflicting interests, a solidaristic orientation is not likely to occur since other actors could easily take advantage of an actor with a solidaristic interaction orientation (Scharpf, 1997, p. 89). Given that, according to ACI, actors are driven by self-interest I only expect to see a solidaristic orientation towards actors that have shared interests. A gain for the French space industry can, for instance, also be regarded as a gain by the French government and French Members of the European Parliament (MEPs). The reason why these actors have solidaristic orientations towards the industry is because they perceive a gain for their domestic industry as a gain for themselves. Based on ACI it is therefore not expected that actors adopt solidaristic orientations if this is against their interest.

2.4.1.6 Answer sub-question 1

Now that the institutional setting including the key actors has been described the first sub-question can be answered.

What is the institutional setting in which EU space policy is adopted?

The institutional setting in which EU space policy is adopted is at its base the Ordinary Legislative Procedure (OLP). Here the European Commission proposes legislation, and the European Parliament and Council must agree on it through negotiated agreements. The Parliament decides by simple majority, while the Council decides by qualified majority voting, which most closely resembles negotiated agreement.

Key actors in this institutional setting are the Commission, the Council, and the Parliament as they are part of the OLP. The literature also shows that, to a lesser extent, the space industry and ESA play a role in EU space policy making.

2.4.2 Summarized theoretical expectations

Now that ACI has been applied to the context of space policy it is possible to create expectations for the analysis. It has to be stated however that the ACI framework requires case-specific data before it can be used to make hypotheses. It is therefore not possible yet to create expectations regarding the preferences of actors or the types of games that are most likely to occur. The hypotheses will be created later in the analysis when the data on the actor preferences and actor constellations has been gathered. However, several expectations concerning the institutional setting and the involved actors can already be made.

- Since space has become a shared competence through the Lisbon Treaty, I expect the EU to adopt a more ambitious space policy than it did before the Lisbon Treaty.
- I expect that, because the Commission is the only true corporate actor, this will give it an advantage in the policy-making process.
- I expect that it will be easier for the Parliament to agree on legislation than it is for the Council, because of their distinct internal modes of interaction.
- If the legislation being proposed is controversial, I expect that this will strengthen the position of the Council vis-à-vis the Parliament as the Council's threat to veto is more credible.
- If the legislation that is proposed is not controversial, I expect the Parliament to have equal legislative power vis-à-vis the Council as the Lisbon Treaty gave them an equal position within the framework of the OLP.
- I expect the involved actors to act according to the logic of consequentiality, making choices that aim to maximise their utility, based on their preferences.
- Actors are expected to have competitive interaction orientations unless they perceive a gain for a particular actor as a gain to themselves. In that case, actors are expected to have a solidaristic interaction orientation towards that actor.

Chapter 3: Methodology

3.1 Method selection

3.1.1 Qualitative research

To properly apply actor-centred institutionalism one needs data on the important actors that are involved, their preferences, the constellations they find themselves in and the mode of interaction that determines the policy outcome. This means that an analysis based on ACI is data intensive and best suited for qualitative research. Creswell (2007, p. 78) distinguishes five different types of qualitative research: narrative research, phenomenology, grounded theory, ethnography, and case study. Narrative research and phenomenology focus on individual and shared experiences and are more suited for psychology than for political science. Ethnography seeks to understand shared patterns of culture of a group but is also hard to reconcile with ACI since it is based on different assumptions. Grounded theory is also not a fitting research method given the wealth of research that has already been done on EU decision making leading to several theories and frameworks aimed at explaining it. Instead of reinventing the wheel, it is, therefore, better to use one of the available frameworks like ACI in this case and test if it can explain the developments in the field of space policy. The last method Creswell discusses, the case study, fits the research topic well hence it is chosen as the method for this thesis.

3.1.2 Case study

A case study aims at developing an in-depth description and analysis of a case or multiple cases (Creswell, 2007, p. 78). Case studies study the phenomenon of interest 'in the field' taking the context into account. This is important for a topic such as EU decision-making that cannot be studied in a lab. Case studies also allow for multiple variables to be studied at the same time, also this is important since the policy outcome according to ACI can change depending on preferences, interaction orientations, actor constellations and modes of interactions. Because of this reason, ACI was developed with the case study method in mind (Scharpf, 1997, p. 303).

There are roughly two types of case studies, comparative case studies and within-case studies (George & Bennett, 2005, p. 18). Each has its strengths and they can also be combined. The comparative method seeks to approximate the conditions of a scientific experiment. By comparing one or more cases that are either different or similar with regard to the independent variable one can make use of experimental logic to draw causal inferences (George & Bennett,

2005, p. 151). The within-case methods seek to establish causality within one case by analysing the causal path within a case. Within-case analysis is useful when the pool of available cases to choose from is very limited. If the choice in cases is limited it might not be possible to create good matches that can be compared. Within-case comparison is therefore critical to small-n analysis (George & Bennett, 2005, p. 179). Another reason to choose a within-case method is that the analysis is very data intensive which makes a comparative case study too costly or time-consuming. When researching the recent developments in European space policy one is confronted with only three potentially viable cases which I will explain later in greater detail. The amount of case-specific data that is required to apply ACI correctly is high since the case-specific preferences and capabilities of the actors, including many MS, need to be identified. When researching negotiations, it can also be necessary to create sub-cases going into the different points of conflict that characterised the negotiations. Acquiring this data for multiple cases is not feasible which is why I have opted for a within-case analysis.

3.1.3 The congruence method

George and Bennett distinguish two within-case methods: process tracing and the congruence method (2005, p. 181). Process tracing focuses more on the process than on the outcome. It analyses process-level evidence on causal mechanisms. By studying the process, it is possible to determine if the similarity (congruence) between the theoretical expectation and the outcome is causal or if it is a correlation. The downside is that process tracing can be very resource-intensive (Schimmelfennig, 2013, p. 105). The congruence method aims at uncovering causality by comparing the theoretical expectation to the observed outcome (George & Bennett, 2005, p. 181), the method is very similar to pattern matching (Yin, 2014, p. 143). Because of its simple design, the method is less data-intensive than process tracing. It is harder however to show causal relations since the method is more vulnerable to omitted-variable bias or equifinality (Schimmelfennig, 2013, p. 101).

For this research, the congruence method is chosen for two reasons: the reality of policy negotiations and the structure of the ACI framework.

First, EU regulations consist of many articles dealing with different aspects of the topic at hand, each aspect could be potentially deal-breaking for one or more of the involved actors. Negotiations therefore often include debates on many different aspects of the regulation and even if all actors in principle agree on the aim of the regulation there can still be disagreement about the implementation. These separate points of discussion can significantly influence the outcome of the final regulation. To do justice to the different points of discussion they need to

be described separately and treated as subcases within the bigger case. Acquiring the required data to carry out process tracing on each of these subcases is difficult, especially since this data is not public and needs to be collected through expert interviews. The congruence method requires less data and is therefore more suitable.

Secondly, the structure of ACI fits congruence analysis well. The bare ACI framework is not enough to make predictions on the outcome therefore the framework needs to be supplemented with case-specific data. ACI provides a framework consisting of multiple steps (Scharpf, 1997, p. 44), as explained in the theoretical framework. By providing each step with case-specific data, ACI can be used to create hypotheses. The congruence method is well suited for this approach since it takes hypotheses and compares them to the outcome.

In short, the need to divide the case into multiple subcases and the good fit between the congruence method and the ACI framework make the congruence method, in this case, preferable over process tracing as a within-case method.

With the congruence method, it is harder however to show causal relations since the method is more vulnerable to omitted-variable bias and equifinality than process tracing (Schimmelfennig, 2013, p. 101). To minimize the risk of omitted-variable bias and equifinality I make extensive use of expert interviews. This is needed since the theoretical framework does not provide enough information to create hypotheses but it is also an opportunity to acquire background knowledge of the case and ask for possible alternative explanations and variables. I also analyse multiple points of discussion as subcases each with their own hypothesis. This means that there are multiple possibilities to verify the accuracy of ACI instead of just one. The reliance on expert interviews for creating the hypotheses and the use of multiple subcases therefore reduces the risks of omitted-variable bias and equifinality and makes it easier to show causal relationships. The internal validity is therefore expected to be high. The case study is also expected to have some level of external validity because the same actors and institutional setting present in the adoption of IRIS^2 were also present in other recent developments in EU space policy. Therefore, it is anticipated that the findings from this analysis will, to some extent, be applicable to these other developments, which, together with IRIS^2, contribute to the EU's growing influence in the space domain.

3.2 Case selection

When looking at the recent increase in EU activity in the space domain I think it is possible to distinguish three possible cases for congruence analysis: the establishment of the EU space programme (EU Regulation 2021/696), the establishment of the secure connectivity program

(EU Regulation 2023/588), and the preparations for the EU space law (Posaner, 2024a). These three cases do not stand in isolation since EU regulation and regulation in general often builds on previous regulation but these are the recent milestones marking the trend of increased EU involvement in the field of space policy. I will briefly introduce the three cases before choosing one that is to be used for the analysis.

First, the EU space law. This law is expected to regulate European space companies and would be the world's first comprehensive space law (Posaner, 2024a). Although the EU space law would be a milestone for the EU, the Commission has not yet sent a proposal to the Council and Parliament meaning that, at this stage, it is not feasible to carry out an analysis.

Second, the adoption of the EU space programme regulation. The establishment of the EU space programme combined all the different EU space activities under one regulation, as a part of this reorganisation the agency in charge of Galileo was renamed to EUSPA and became the agency responsible for the execution of the newly formed EU space programme. The EU space programme set out the budget for the MFF of 2021 - 2027. Although the regulation rebranded the EU's efforts in the space domain and centralised its execution under EUSPA it did not substantially add to the EU's space efforts. And although the EU space programme does aim to simplify cooperation between the EU, ESA and the MS it does so without fundamentally affecting the balance of responsibilities between actors (European Commission, 2020).

Lastly, the adoption of the secure connectivity programme. The secure connectivity programme, passed in 2023, adds significantly to the EU's activities. Building on its small existing Govsatcom programme it creates a new multi-orbit constellation to the EU's space infrastructure called IRIS^2, aimed at providing secure communications (European Commission, n.d.-b). This resembles the first new constellation since Galileo and Copernicus, that were established in the 2000s. Although the secure connectivity programme regulation lends several aspects from the EU space programme it is a separate regulation and does not (yet) fall under the EU space programme.

From these three cases, the secure connectivity programme is the most suitable for the research. First, the programme was adopted quickly, in only 9 months, and fitted into an existing MFF signalling urgency and political will (European Commission, 2023a). This makes it a good case for answering the research question since I want to understand why the EU has increased its role in space relatively suddenly and recently.

Usually, big programmes like IRIS^2 are negotiated before the start of a new MFF so that the costs of the programme can be integrated into the new MFF from the start, this is also how the EU space programme was adopted (EU Regulation 2021/696). IRIS^2 was different however, it was not introduced in the next MFF (starting in 2028) but was fitted into the already existing MFF which required other EU programmes to be cut prematurely. This indicates a certain level of urgency or priority since it is not easy to fit an expensive programme like IRIS^2 within the existing EU budget.

The regulation was also adopted quickly with only nine months between the publishing of the Commission's proposal to the adoption by the Council and Parliament (European Commission, 2023a). This also emphasises the urgency and priority the programme had.

The research wants to understand why the EU has managed to increase its role in space so rapidly in the last couple of years. This case is the prime example of the EU increasing its role in space rapidly which is why it makes it a better case than the EU Space Programme which was adopted more routinely.

Second, it is easier to collect data on the adoption of the secure connectivity programme. Because the regulation was passed in 2023 it is relatively easy to find interviewees who were involved in the negotiations. The space programme was adopted in 2021 but negotiated in 2019 and 2020. Many people who were involved in these negotiations are now working somewhere else or do not remember many specifics about the negotiations. Although the easier data collection was not decisive in choosing the adoption of IRIS^2, it did make it a more suitable case.

3.3 Data collection

3.3.1 Data requirements

To apply the congruence method, hypotheses need to be created that follow from ACI. To create these hypotheses, I need to apply the framework and gather data regarding the involved actors, the capabilities and preferences of these actors, the actor constellations and the modes of interaction. The theoretical framework already provided the information concerning the institutional setting and the involved actors. The data that is still required regards the course of the negotiations and the capabilities and preferences of the actors.

To narrow down the analysis of the adoption of IRIS^2, I will focus my research on the key points of contention. To determine these contentious issues, I require expert interviews with people who were personally involved in the adoption process. When the contentious issues are

known the preferences and capabilities of each actor with regard to these contentious issues need to be analysed. Also for this, I require expert interviews supplemented by a document analysis. Based on this data also the actor constellations can be created and since the modes of interaction are given by the theoretical chapter this is all the information that is needed to formulate hypotheses based on the ACI framework for each of the contentious issues. First I will describe the interview data I used and after that, I will describe the documents I used for the analysis.

3.3.2 Interview data

The analysis is based on 17 interviews conducted with experts from the European space domain (Appendix). I conducted two interviews with policymakers at the Commission. One with a Commission official who works on space policy (R6) and one with a national expert in professional training from the Netherlands who also worked on space policy (R10). These interviews provided me with data on the preferences and capabilities of the Commission. To understand the capabilities and preferences of the European Parliament I interviewed the assistant of the rapporteur on IRIS^2 (R5). This assistant was directly involved in the negotiations within the Parliament and also the negotiations between the Parliament and the Council. For the Council, I interviewed the Dutch representative who negotiated on behalf of the Netherlands in the Council (R4). I also interviewed the current Dutch representative in the Council (R12), a Dutch national expert who attended the negotiations on the EU space programme regulation (R13) and the Belgian representative in the Council (R8) who was also chair of the Space working party of the Council at the time of the interview.

To better understand the national positions represented within the Council, I also conducted interviews with experts working at national space agencies. In the case of the Netherlands, I had an interview with the expert on satellite communications (satcom) at the Netherlands Space Office (R3) and the Dutch representative in the administration board of EUSPA (R14). I also interviewed the head of European and international relations at the French space agency (CNES) (R2), the director of the Spanish Space Agency (R15) and a senior advisor from Denmark working on space policy (R17). The Belgian representative in the Council (R8) also worked for the Belgian space department hence I also discussed the Belgian capabilities and preferences with him. I also interviewed the head of satellite communication and navigation at the Norwegian Space Agency (R9). Although Norway is not a member of the EU it is actively participating in the EU space programme. The interviews with the Netherlands, Belgium and Denmark show the perspective of the small Member States while the interviews with France

and Spain show the perspective of the big Member States. Norway is also included since it provides the unique perspective of a country that is actively participating in the EU space programme but is not represented in the Council.
Next to the EU institutions and the Member States I also interviewed the representatives of the space industry since this is one of the most important stakeholders in the IRIS^2 constellation. I interviewed a policy advisor of ASD Eurospace (R1) the main interest group for the European space industry representing 70% of employment and 90% of turnover. I also interviewed the chairman of SME4SPACE (R16), a smaller interest group that specifically represents the interests of small and medium-sized enterprises (SMEs) active in the space sector. Within the space sector, there are conflicting interests due to the different sizes of the companies. It was therefore important to include both interest groups.

Besides the above-mentioned people, I also interviewed R7 who wanted to remain anonymous but also represents an important organisation in the European space domain. I further interviewed a legal advisor from Germany (R11) who specialised in EU-procurement law with experience in the field of space. This interview added a legal perspective and gave additional insight into the preferences of Germany.

3.3.3 Desk research data

Although expert interviews provided me with the majority of my data, I also used documents. I used the text of the adopted regulation and the Commission's proposal to study the amendments that the Council and the Parliament made. I combined these differences in the text with the interview data to understand how important certain changes were. I also used position papers from both ASD Eurospace and SME4SPACE to see their preferences, I subsequently verified their position when doing interviews. Since a direct interview with a German policymaker is missing, I used the German space strategy from 2023 and documents from the Bundesrat about the German position on IRIS^2 to understand the German preferences. I did the same for the Dutch position although I had interview data in that case. For the European Parliament, I used recordings of speeches on the adoption of IRIS^2. I also used the voting results and public statements made by the rapporteur, shadow rapporteurs, and party groups. To get a broader understanding of the context and the process through which IRIS^2 was adopted I also used news articles from various news sites specialised in European politics or the space industry.

3.3.4 Data analysis method

I analysed the interviews by summarizing the parts most important for the analyses. Since these were expert interviews and the ACI framework provided me with a clear frame of what I needed to know a coding scheme was not required. Instead, I sorted the transcribed text by topic focussing on the capabilities and preferences of the different actors. I also asked more open questions however to be able to find possible omitted variables and to check for equifinality. I also used the interview data to distinguish the key points of contention to answer the second sub question and use these as the base for the analysis. For the documents, I worked in a similar fashion summarizing the parts relevant for the ACI framework and the policy outcome more broadly.

3.4 Operationalisation

As stated above I will use the interviews and documents to find the preferences and capabilities of the involved actors and to understand how the negotiations have unfolded. I will analyse the adoption of IRIS^2 by looking at the main contentious issues. The most important contentious issues are determined based on the interview data and described at the start of the analytical chapter, answering the second sub question.

For each contentious issue, I will first determine the preferences. I will attempt to estimate the preferences through ACI's concepts of interests, norms and identity. If these three components prove to be too abstract and do not allow for a clear description of the actors' position, I will describe the position as it appeared from my data. This means that the part of ACI that estimates the preferences cannot be tested but at least the subsequent steps can be tested. ACI's fourth component of preferences, interaction orientations, will be discussed later than the first three and will be introduced when discussing the actor constellations. After describing the preferences, I will also briefly explain the capabilities of the actors using the institutional setting and additional capabilities that are not directly related to the institutional setting.

The next step of ACI is to represent the contentious issue in an actor constellation. This is done by estimating the payoffs for each actor per policy outcome. These payoffs will be put in a game matrix and are represented by numbers ranging from 5 to -5. 5 represents the best possible outcome while -5 represents the worst possible outcome. When attributing these numbers, I use the ordinal level of measurement meaning that there are no fixed intervals between numbers. The numbers serve the purpose of ranking the outcomes for actors from most preferable to least preferable. Although the ranking is relative, there is a neutral status quo position indicated by

0. Numbers above zero are seen as a net gain for the actor while numbers below zero are seen as a net loss. The game matrices are used to determine if there are dominant strategies that indicate what the possible outcomes can be.

If the actor constellation cannot predict the outcome because there is more than one Nash equilibrium, the mode of interaction will be added. The modes of interaction are already known as they are given by the institutional setting described in the theoretical chapter. When the mode of interaction is introduced, I will display the outcome of the game matrix graphically to assist in predicting how the mode of interaction will affect the policy outcome. When the mode of interaction is added it is possible to predict what the policy outcome will be based on ACI. The prediction of the outcome for each contentious issue will be formulated as a hypothesis. These hypotheses will subsequently be compared to the actual policy outcome to see how accurate the predictions of ACI were.

Chapter 4: Analysis

This chapter will apply the ACI framework to the adoption of IRIS^2. The chapter begins by outlining the background to provide context for the IRIS^2 negotiations. When the context is clear the main contentious issues of the negotiations are introduced, answering the second sub question. ACI will then be applied to the case by taking the contentious issues and analysing them separately. ACI is applied to each of these issues by first describing the preferences and capabilities of the involved actors. Based on this, the actor constellation will be established using game matrices, after which the mode of interaction will be added. When the three steps of the ACI framework have been applied hypotheses will be formulated that predict the policy outcome. Finally, the hypotheses are compared to the actual policy outcome to see how well ACI can explain the adoption of IRIS^2.

4.1 Background

4.1.1 European cooperation before the EU's involvement

Before the EU became active in space policy the national governments had a central role. Through ESA, 22 European countries cooperated on space science, exploration and technology development. One of the main aims of ESA is to strengthen the European industrial base through investment in the space sector (ESA, 2019, p. 20). MS want to ensure that not only the European industry is strengthened but that also their domestic industry benefits from the investments in space. Consequently, there has been a strong emphasis on the fair distribution of ESA funds among Member States.

Although the ESA MS cooperate when it comes to exploration, science and technology development. There is another part of the space domain where very little cooperation has taken place: military space applications. While many ESA MS are too small to operate their own space systems, the larger MS like France, Germany, Spain and Italy all have their own separate satellites for security and defence applications (R5). Defence applications make up a significant part of the space sector but countries have been unwilling to cooperate in this area (Henry, 2016).

4.1.2 Cooperation in the area of satellite communications

Satellite communications (satcom) is the biggest space application (ESA, n.d.) and is, just like the broader space sector, divided between civil applications carried out by commercial satellite operators and defence applications carried out by national militaries. Within the EU countries like France, Germany, Italy and Spain all operate their own military satcom systems (R5). Although this is a clear duplication of capabilities it has proven difficult to strengthen cooperation in this area. ESA has traditionally always been focussed on the peaceful use of space and is therefore not well suited as a platform for defence cooperation. Besides that, most MS were up until recently not open to the idea of cooperating in the area of secure satcom (Henry, 2016).

The Commission, however, did want to increase cooperation in this field (Henry, 2016). Some MS, most notably France, were on the side of the Commission and wanted the EU to strengthen the cooperation (Darnis et al., 2011, p. 85). Other MS such as the UK and central- and eastern European MS preferred to organise this type of cooperation through NATO and MS like Germany and the Scandinavian countries wanted Europe to remain focussed on the peaceful use of space (Darnis et al., 2011, p. 86).

Despite the initially diverging positions the MS agreed to cooperate more through the EU to increase reliability and cost-effectiveness (European Commission, 2016). This led to the creation of a new component of the EU space programme that would pool and share existing satcom capabilities from MS and commercial providers (R3). This component, called Govsatcom, had a modest budget and did not have its own hardware (Selding, 2019). It did, however, signify a move towards European integration in this area and provided a base for the IRIS^2 proposal.

4.1.3 The IRIS^2 proposal

After the adoption of Govsatcom, the Commission started work on the IRIS^2 proposal. The idea of an IRIS^2-like system had already existed for years (Henry, 2016) but with the adoption of Govsatcom, it became more feasible. Moreover, Commissioner Breton for Internal Market, an influential Commissioner, made IRIS^2 one of his priorities (R6). With this momentum and political backing, the Commission sent the proposal for the secure connectivity programme regulation (IRIS^2) to the Parliament and Council at the start of 2022 (European Commission, 2022b).

The IRIS^2 program aims to provide high bandwidth, low latency secure communication capabilities with global coverage to the EU institutions and MS governments. It is distinct from the domestic satcom systems that the large MS already operate because it can transfer more data faster. To achieve this higher bandwidth and lower latency, a constellation of hundreds of satellites is required which is too expensive for individual MS to develop and operate on their own. The EU can therefore fill a gap that the MS individually could not fill. To argue that IRIS^2 is necessary the Commission emphasised that the programme will reduce the dependency of the EU on commercial and third-country satellite providers and therefore strengthen the strategic autonomy of the EU (R4, 5). The Commission also stressed that the US, China and Russia are already developing similar systems and that Europe cannot stay behind (European Commission, 2022a, p. 53).

4.1.4 Points of contenion

Sub-question 2: What were the main points of contention between actors during the adoption process of IRIS^2?

Based on the interviews and the document research on the adoption process I have found four main points of contention that were an important part of the IRIS^2 negotiations. These were issues that either the Council and the Parliament or the MS within the Council did not agree upon. These issues are:

1. The overall need for IRIS^2

As discussed in the background section MS had diverging positions on European integration in the field of secure satcom and this also played a role during the IRIS^2 negotiations.

2. The source of funding

IRIS^2 is an expensive programme that needs to be inserted into an existing budget. This caused a debate between the Council and the Parliament on where the funding should come from.

3. The role of SMEs in the implementation

As discussed in the background, it is important for MS that their domestic space industry benefits from pan-European investments like IRIS^2. This caused a debate among the MS about the inclusion of SMEs in the IRIS^2 procurement since SMEs play a central role in the space industries of some MS.

4. The role of ESA in the implementation

During the negotiations, there was disagreement about the extent to which ESA should be involved in the implementation of IRIS^2. With some MS pushing for a more important role for ESA.

Each of these issues will now be analysed using the ACI framework.

4.2 Issue 1: The need for IRIS^2

4.2.1 Context

The first issue concerns the overall need that MS perceive for a programme like IRIS^2. Although the Commission has advocated for the constellation citing strategic autonomy as its main argument (European Parliament, 2023), not all Member States are as convinced as the Commission of the necessity of IRIS^2 (R2, 5). Amongst the Member States, there are different perceptions regarding the importance of strategic autonomy and the desirability of EU investment in the space sector (R2, 8). As mentioned in the theoretical chapter, IRIS^2 can only be adopted when there is a qualified majority in the Council. Issue 1 therefore analyses the preferences and capabilities of the MS to see if there is enough support in the Council.

4.2.2 Preferences

As described in the theoretical chapter ACI divides preferences into four components: interests, norms, identity and interaction orientation (which will be introduced later). In the case of issue 1, it was not possible to formulate sufficiently precise MS positions using interests or norms which is why only identity will be used here.

When using ACI's identity component a difference is observed between the two largest MS of the EU: France and Germany. France prioritises security and is one of the most prominent voices in favour of strategic autonomy (R2). France has also a history of public investments in domestic industries that are considered to be of strategic importance. Germany on the other hand, although not against the frame of strategic autonomy, is much more hesitant to support it (R2). Germany also does not invest in domestic industry to the extent that France does (R1). France and Germany are not the only Member States that are involved in this cleavage, but they are the most prominent ones. The result of these diverging identities is that some Member States are much more supportive of the IRIS^2 proposal than others, even without considering the specifics of funding, the inclusion of SMEs or the role of ESA.

4.2.3 Capabilities

This issue regards the MS within the Council. When it comes to capabilities a distinction can be made between two groups of MS: the larger MS and the smaller MS. The larger MS have more influence than the smaller MS for two main reasons.

First, the bigger populations of the large Member States mean that it is easier for them to form a blocking minority as explained in the theoretical chapter.

Secondly, the large Member States have bigger administrations and therefore access to more human capital (R4, 13). The representatives from large MS are more specialised and have more supportive staff than the representatives from small MS (R13). This translates into a knowledge advantage that strengthens the position of the large MS.

Based on the capabilities it is expected that France and Germany and to a lesser extent also Italy and Spain will be the most influential MS during the negotiations.

4.2.4 Actor constellation

The action constellation on this issue consists of two parties. On one side there are the 'supportive actors' consisting of the Commission, Parliament and supportive MS. On the other hand, there are the 'hesitant actors' consisting of more hesitant MS. The gains from the supportive actors differ. Some MS support IRIS^2 because they attach value to more security (R4, 8), while other MS like France do attach value to security but also support IRIS^2 because they hope it will benefit their domestic space industry (R12, 17). The Commission and Parliament value security but will also see their roles increased in the space domain due to IRIS^2, which is an additional reason for them to support it. Based on this I expect the Commission, the Parliament and France to have a payoff of 5 points if IRIS2^2 were to be adopted. I expect that the MS who mainly support IRIS^2 due to security concerns will gain by 3 points. Since the gains of the coalition need to be averaged, I give the supportive actors a gain of 4 points if IRIS^2 is adopted.

The MS who belong to the hesitant actors are similar to the supportive MS with a payoff of 3. The main difference is that the hesitant MS don't value security as highly as the supportive actors. Examples of such MS are Denmark (R8), Germany and Austria (R2). The competitive interaction orientation of Germany towards France also makes it harder for Germany to accept a programme that benefits France more than it benefits them. Despite this, the hesitant MS are not against security and the domestic space industry of Germany is expected to benefit at least somewhat from the programme (R5). Because of this, I expect the hesitant actors to have a payoff of 1 point if IRIS^2 is adopted.

If IRIS^2 is not adopted I expect the supportive actors to lose by 2 points while the hesitant actors lose by 1 point. The reason why they both lose is because both have a competitive interaction orientation towards strategic competitors like China and, to a lesser extent, the US. Because these countries are developing their own satellite communication capabilities, the EU risks falling behind if IRIS^2 is not adopted (R3, 4). Since the supportive actors value security more than the hesitant actors they lose one point more when IRIS^2 is not adopted.

Support for IRIS2	Hesitant actors		
		IRIS^2	Status Quo (SQ)
Supportive actors	Status Quo (SQ)	-1 -2 NA	-1 -2
	IRIS^2	**1** **4**	-1 -2 NA

Table 4.1 payoffs of IRIS^2 depending on actor's preferences (NA = Nonagreement)

This situation most closely resembles a game of 'assurance' as is shown in Table 4.1. Although it is not exactly a game of assurance as there is only one Nash equilibrium, the outcome is nonetheless the same. In this scenario, both parties agree to work together since it is in their best interest. In this case, the supportive actors gain more than the hesitant actors. Despite the difference in gains, the game does predict that IRIS^2 will be adopted since the dominant strategy for both parties is to choose IRIS^2 as is shown by the Nash equilibrium (in red). The hesitant actors are expected to be more critical, however, as a nonagreement scenario is more acceptable for them than it is for the supportive actors. This leads to the following hypothesis:

Hypothesis 1: *IRIS^2 will be adopted, however, the hesitant actors will be more critical as the gains are not equally distributed.*

4.3 Issue 2: The source of funding

4.3.1 Context

The second issue regards the funding for the IRIS^2 programme. Acquiring enough funding for a programme as expensive as the IRIS^2 constellation is not trivial and requires compromises. Within the Commission, the supporters of the programme led by Commissioner Breton (R5, 10) nonetheless managed to acquire approval from the College of Commissioners to publish a proposal that would cut multiple running programmes in order to reserve 2.4 billion euros for IRIS^2 within the current MFF (R2, 5). The Commission's proposal took funding from Heading 1, 5, and 6 of the EU budget and additional funding from Horizon Europe, the EU space

programme, and the Neighbourhood, Development and International Cooperation Instrument (NDICI) (EU Regulation 2023/588, Article 13).

4.3.2 Preferences

When estimating the preferences of the Council and the Parliament using only the components of preferences as described by ACI it is not possible to make detailed predictions. General predictions can be made such as the Parliament pushing for more funding from the MS as this aligns with the Parliament's interest of growth. However, when dealing with a rather specific issue as is the case here, the analysis should not be limited to deductive reasoning using the abstract concepts of interests, norms and identity. I will therefore continue to expand on the preferences of the Parliament and Council using the case-specific data I have gathered.

When the Commission sent the proposal to the Council and Parliament, they developed diverging positions on how the programme should be funded. The Parliament was strongly in favour of IRIS^2 but it wanted to use 'fresh money' to fund the programme (R5). Using fresh money meant that no running programmes would have to be cut. The most straightforward way to do this was by having the MS pay extra into the EU budget to fund the IRIS^2 programme. Other options the Parliament discussed were (1) to use leftover money from the Horizon Europe programme, which would otherwise return to the MS, and (2) to use the margins of other EU programmes to fund IRIS^2 (R5). The Parliament also discussed which programmes should be cut if it would not be possible to get fresh money. Here the Parliament was internally divided with MEPs prioritising different programmes (R5). One of the programmes that the Parliament did not want to cut, however, was the NDICI.

Also within the Council different priorities existed, but Member States were in agreement that they did not want to pay extra for IRIS^2 and stressed that the programme had to be implemented in a budget-neutral way (R5). The Council was also not in favour of cutting either the Galileo or Copernicus programmes and did not want to harm the goals of the Horizon Europe programme (R4).

4.3.3 Capabilities

As described in the theoretical chapter the institutional setting of the OLP gives both institutions the capability to block the IRIS^2 programme. However, there is also a disparity in their capabilities, with the Council having access to more information and expertise (R4, 5).

The Council has more expertise than the Parliament mainly due to its specialized structure and access to national experts. The Council consists of different configurations organized by policy

areas. Space policy is almost exclusively negotiated at the level of the Working Party on Space (R12, 13). The working parties are at the lowest level in the Council's hierarchy and are therefore the most specialised. The Working Party on Space consists of representatives with substantial knowledge of space (R2, 12), unlike the MEPs in the Parliament who have much broader portfolios (R4, 5). Additionally, space attaches in the Council have direct contact with national space experts and are often supported by these experts during negotiations, further enhancing their expertise (R2; R13).

In contrast, the Parliament's organization into fewer, broader committees limits specialization (R5). Space policy is discussed in the Committee on Industry, Research and Energy (ITRE) as one among many other policy areas being discussed (R5). Due to the lack of specialisation, MEPs have to rely more on information from national governments and interest groups, which can be biased (R1, 5). These factors make it hard for the Parliament to match the Council's expertise.

4.3.4 Actor constellation

The actor constellation for this issue sees the Parliament and the Council in direct opposition. The Parliament is already strongly in favour of IRIS^2 (R5) and would gain even more if the programme would be funded through fresh money. I therefore expect the Parliament to have a payoff of 4 if IRIS^2 is not funded out of the EU budget. Even if IRIS^2 would have to be paid out of the EU budget I still expect the Parliament to be in favour given its preference to increase the role of the EU in the space domain. I therefore expect the Parliament to have a payoff of 3, if IRIS^2 would be paid out of the EU budget.

The Council is overall also expected to be in favour of IRIS^2 but not to the same extent as the Parliament. This is because some countries perceive the need for IRIS^2 more than others as discussed in issue 1. Since the hesitant countries do not perceive IRIS^2 as a priority they are not willing to contribute extra to the EU budget. Because of their competitive interaction orientation, they also do not want to pay extra for a programme that will mostly benefit the space industry of a select group of countries (Philipp, 2024, p. 6). I therefore expect the Council to have a payoff of 2 if IRIS^2 is funded out of the existing EU budget and a payoff of 1 if the programme is funded through fresh money.

If IRIS^2 is not adopted, however, I expect both to have a payoff of -1, as both have a competitive interaction orientation towards strategic competitors like China or the US, and the lack of secure

satcom capabilities would place Europe at a disadvantage (R4, 5). Now that there is an estimate for all the values, the actor constellation can be created, the result is shown in Table 4.2.

IRIS² Funding	European Parliament (EP)		
Council of Ministers (CoM)		Agree to CoM proposal	Agree to EP proposal
	Agree to EP proposal	-1 -1 NA	**4** **1**
	Agree to CoM proposal	**3** **2**	-1 -1 NA

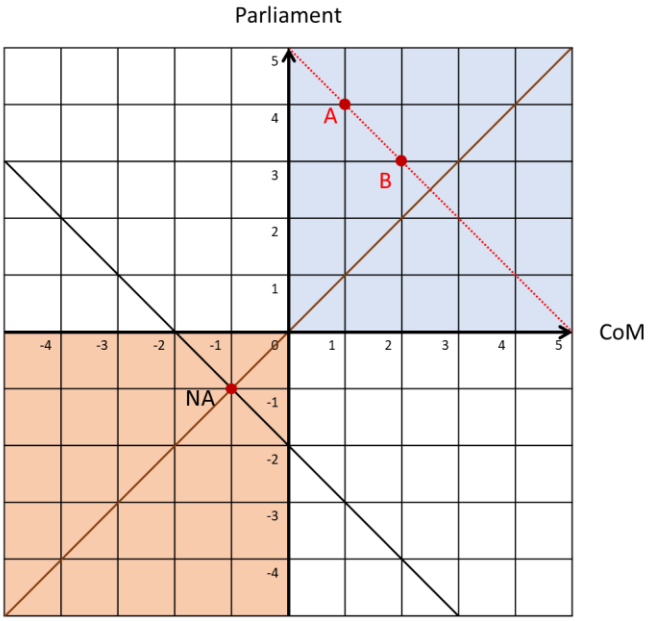
Table 4.2 payoffs depending on the source of IRIS² funding (NA = Nonagreement)

In this case, both actors agree in principle on the adoption of IRIS² but they disagree on how it should be funded. This actor constellation therefore most closely resembles a battle of the sexes game as can be seen in Table 4.2. It is not quite the same as a classic battle of the sexes game since the Parliament never has a lower payoff compared to the Council. The outcome is nonetheless the same as if it were a battle of the sexes game. There are two Nash equilibria and each actor prefers a different one. This means that the actor constellation is not enough to predict the outcome of this issue.

4.3.5 Mode of interaction

Since the actor constellation has two Nash equilibria, the mode of interaction needs to be added to the analysis to predict the outcome. As described in the theoretical framework the mode of interaction between the Parliament and the Council is negotiated agreement. This has a couple of implications for the outcome of the game. First of all, neither the Parliament nor the Council will accept an outcome that is worse than the status quo. This means that an agreement on the funding of IRIS² must be acceptable to both the Council and the Parliament.

This situation is graphically represented in Graph 4.2 based on the data from Table 4.2. Here the X-axis shows the payoffs of the Council, while the Y-axis shows the payoffs of the Parliament. The bottom left area marked in light red includes all the outcomes that would be a net loss for both the Council and the Parliament. The blue area in the top right shows the 'negotiation space' and includes all the outcomes that would be a net gain for both the Council and the Parliament. Point A (1:4) represents the outcome if the Council and Parliament agree that the Member States will provide fresh money to fund IRIS^2. Point B (2:3) on the other hand represents the outcome if the Council and the Parliament would agree that IRIS^2 is funded by cutting existing EU programmes. Both options fall within the negotiation space and are much better than the alternative of nonagreement which lies in the red area.



Graph 4.1 positions of the Parliament and the Council (CoM) (NA = Nonagreement)

Although options A and B both fall in the negotiation space, the Parliament gains more from IRIS^2 than the Council. Bargaining theory prescribes that the actor who gains the most from an agreement is in a weaker position and is more likely to make concessions. Especially in the situation where the Council and the Parliament compete with each other, it is hard for the Council to accept option A as this would be a big relative loss compared to the Parliament. This makes option B the most likely outcome according to ACI.

Hypothesis 2: *the IRIS^2 programme will be funded out of the EU budget since the Council has a stronger position than the Parliament.*

4.4 Issue 3: The role of SMEs in the implementation

4.4.1 Context

The biggest point of contention regarded the level of involvement of SMEs in the procurement of IRIS^2. The debate on the involvement of SMEs was especially important in the Council. This is because some MS, where the space industry is mostly made up of SMEs, wanted to ensure those SMEs could participate.

The space industry can roughly be divided into two types of companies, Large System Integrators (LSIs) and Small and Medium-Sized Enterprises (SMEs). LSIs are companies that take the lead in the development of space infrastructure. The LSIs are responsible for the final integration of the product while SMEs are involved as subcontractors producing parts of the product. LSIs prefer the freedom to decide how much and to whom they subcontract (R1, 11). SMEs on the other hand want rules that guarantee a certain level of SME involvement (R16).

The Commission's proposal that was sent to the Council gave significant freedom to the bidders when it came to the extent to which they wanted to involve SMEs (European Commission, 2022b). The Commission proposed to set up a competition where consortia of space companies would deliver their bid for the IRIS^2 constellation (R11). The Commission would subsequently choose the most competitive bid. When selecting the best bid the Commission would give preference to bids with high involvement of SMEs and start-ups. There was also a non-binding rule that companies outside of the tenderers group had to be involved. This rule aimed to include SMEs and widen the geographical coverage of the companies involved in the procurement (European Commission, 2022, p. 35). Overall, the Commission's proposal did not include any guarantees for SME involvement.

4.4.2 Preferences

When estimating the preference of the MS using ACI we can use the concept of interest to predict that MS with LSIs will support the Commission's proposal while MS with predominantly SMEs will push for guarantees for SME involvement. This prediction is based on the assumption that MS want economic growth and supporting the domestic industry will contribute to economic growth. However, similar to issue 2, the analysis should not be limited to deductive reasoning. I will therefore continue to expand on the preferences of the MS based on the case-specific data I have gathered.

Because the Commission's proposal for the bidding process was not restrictive the proposal was endorsed by the LSIs who saw their interests served well (R1), also MS like France whose space industry mostly consists of LSIs supported the proposal (R2). The SMEs however wanted more guarantees that they would be included. Especially the German SMEs represented by the interest group Arbeidskreis Raumfahrt KMU (AKRK) wanted a threshold which would guarantee that they would be included in the procurement (R1). Germany was not the only country however, small countries with a space industry predominantly made up of SMEs also wanted guarantees and voiced this in the Council (R1, 4). Also, the Parliament wanted the inclusion of SMEs however not necessarily to the same extent as some Member States (R5).

The contention surrounding the involvement of SMEs can be understood as an attempt to include the space industries of MS without LSIs in the IRIS^2 procurement (R4, 11). This is needed since LSIs are much better equipped than SMEs to deal with large space projects such as IRIS^2 (R1, 11). Traditionally European space projects have been managed by ESA which uses its georeturn principle to solve the problem of fair distribution amongst national space industries (R1, 4, 7). The georeturn principle states that the value of contracts that are given to the industry of an ESA MS is proportional to the contribution of that MS to the ESA budget. This means that countries that contribute more to ESA will also receive more contracts for their domestic space industry (R4). The Commission, however, does not use georeturn as it goes against its principles of a common market and fair competition (R11). Even though the Commission does not use georeturn the MS still want to protect their domestic space industries. A threshold for SMEs can therefore be understood as an attempt from Member States to reproduce the effect of ESA's georeturn principle in a way that complies with EU competition rules (Philipp, 2024, p. 8; R11). The reason that France does not prefer the threshold for SMEs is the same reason why France does not prefer the georeturn principle at ESA: France has the most competitive space industry for big space projects (R4).

The contention over SME inclusion already came up during the proposal writing process at the Commission and also the Parliament discussed the topic, however, the different interests really became apparent in the Council. Here Germany and other Member States such as Portugal, Denmark, Sweden, Finland, Ireland and the Netherlands pushed for the inclusion of a 30% threshold meaning that the LSIs would have to subcontract at least 30% of the value of their contracts to companies outside of the group of the prime tenderer (R4, 5). This was done with the explicit aim of enabling the cross-border participation of SMEs (EU Regulation 2023/588, Article 21). Because the contention was most obvious in the Council I will use the Council as the base for the actor constellation.

4.4.3 Capabilities

In terms of capabilities, this issue is similar to issue 1 as it also concerns a disagreement between MS. The larger MS like France and Germany are expected to have more influence due to their population size and larger administrations. Because France and Germany are the largest MS it is difficult to pass the IRIS^2 programme without their support (R4).

4.4.4 Actor constellation

The actor constellation regarding the inclusion of SMEs consists of two groups of Member States.

First, Germany and a group of small MS want a 30% threshold for the inclusion of SMEs (R4, 5). These countries were backed by the SMEs in the space industry and their interest groups (Bournou, 2023). I will refer to this group as the SME Coalition (SMEC).

Second, France with some other MS, the Parliament, and the main space industry interest group (ASD Eurospace) thought a threshold of 30% is too high (R1, 2, 5). Since the 30% threshold was not in the original Commission proposal, I will refer to this group as the Status Quo Coalition (SQC).

The SQC is strongly in favour of IRIS^2 as it constitutes a significant, long-term, investment into the space industry. Without a threshold the SQC is better situated to benefit from the program but also with the threshold they would benefit. The threshold the SMEC is proposing is 30% meaning that 70% is still likely to go to the main consortium. I therefore expect the SQC to have a payoff of 3 if IRIS^2 is adopted with a 30% threshold and a payoff of 4 if IRIS^2 is adopted without a threshold.

The SMEC is only moderately in favour of IRIS^2. Although the programme signifies a long-term investment in the industry the SMEC fears that their industries will not be able to benefit from this. The implementation of a 30% threshold would improve the opportunities for the MS with SMEs but it would still not match the certainty of ESA's georeturn principle. The protection of the domestic space industry is an important goal for many MS. The competitive interaction orientations of MS towards each other also makes it harder to accept a policy decision that will put their own domestic space industry at a disadvantage. I therefore expect the SMEC to have a payoff of 2 if IRIS^2 is adopted with a threshold and a payoff of 1 if IRIS^2 is adopted without a threshold.

As both coalitions have a competitive interaction orientation towards strategic competitors like the US or China (R2, 4), I expect their payoffs in the case of a nonagreement to be -1 for both.

Inclusion of SMEs	SME Coalition (SMEC)		
Status Quo Coalition (SQC)		No SME threshold	30% SME threshold
	30% SME threshold	-1 -1 NA	**2** **3**
	No SME threshold	**1** **4**	-1 -1 NA

Table 4.3 payoffs of IRIS^2 depending on the inclusion of SMEs (NA = Nonagreement)

The resulting game matrix, shown in Table 4.3 is the same as that of issue 2. The constellation therefore most closely resembles a battle of the sexes game but still differs from the classic battle of the sexes game since the SQC never has a lower payoff compared to the SMEC. The outcome is still the same, however. There are two Nash equilibria and each actor prefers a different one. The actor constellation is therefore not enough to predict the outcome.

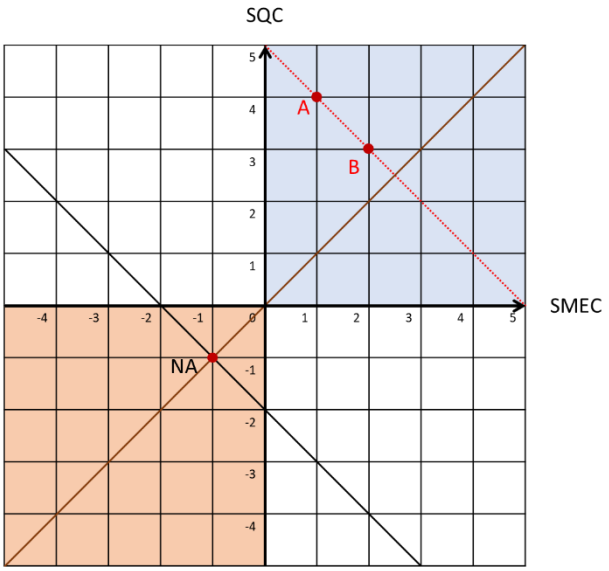
4.4.5 Mode of interaction

Because the SMEC and the SQC were groups of MS in the Council the mode of interaction is negotiated agreement. Both coalitions were big enough to form a blocking minority meaning that both coalitions had to agree before IRIS^2 could be adopted. Neither the SMEC nor the SQC will accept an outcome that is worse for them than the status quo. This means that an agreement on the inclusion of SMEs must be acceptable to both the SMEC and the SQC.

As previously discussed under actor preferences the SQC already gains when IRIS^2 would be adopted with the inclusion of a 30% threshold for SMEs. The SMEC also gains since they want secure connectivity but they don't gain as much as the SQC since their industry will likely not benefit as much from IRIS^2 procurement as the industry from the SQC.

This situation is graphically represented in Graph 4.2 based on the data from Table 4.3. Here the X-axis shows the payoffs of the SMEC, while the Y-axis shows the payoffs of the SQC. The graph is the same as for Issue 2, with the red area indicating outcomes that are negative for both actors and the blue area indicating outcomes that are positive for both actors: the negotiation space. Point A (1:4) represents the outcome if the SQC and SMEC agree that there will be no minimum threshold for SME inclusion, while point B (2:3) represents the outcome if the SMEC and the SQC agree on a 30% threshold for SME inclusion. Both options fall within the negotiation space and are much better than the alternative of nonagreement which lies in the red area.

To determine which of the two options is most likely to be adopted we therefore have to turn to the number of payoffs each actor receives. Bargaining theory predicts that the party gaining the most from IRIS^2 will be more willing to make concessions to adopt it.



Graph 4.2 payoffs of the Status Quo Coalition (SQC) and the SME Coalition (SMEC) (NA = Nonagreement)

In this case, the SQC gains more from IRIS^2 than the SMEC for two reasons. Firstly, the domestic space industries of the SQC will profit more from IRIS^2 procurement, even with the inclusion of a 30% threshold. Secondly, the SQC will gain more from the services that IRIS^2 will provide since there is a substantial overlap between the supportive Member States from issue 1 and the SQC. There is also a similar overlap between the hesitant Member States and the SMEC. For these reasons, I expect, based on ACI, that a 30% SME threshold will be included in the programme.

Hypothesis 3: *a 30% threshold for SMEs will be added to the regulation since the domestic industry is important for the position of national governments in the Council.*

4.5 Issue 4: The role of ESA in the implementation

4.5.1 Context

The role of ESA in EU programmes is frequently discussed among Member States (R12, 13) and this was also the case during negotiations of the IRIS^2 regulations (R4, 15). Although not as pressing as the inclusion of SMEs, it was still important for several Member States that ESA was involved in the implementation of the EU space programme (Bundesrat, 2022; Ministerie van Buitenlandse Zaken, 2022; R4, 8). Not only the Member States but also the industry wanted to include ESA (R1). When the Commission sent its proposal to the Council and the Parliament, it had already included ESA to some extent in the implementation, stating that it was a trusted entity responsible for the implementation of certain parts of IRIS^2 (European Commission, 2022b, p. 39).

4.5.2 Preferences

The contention surrounding ESA's role in the implementation of IRIS^2 comes from the somewhat ambiguous relationship between the EU and ESA. Actors such as France, the European Commission, and the European Parliament advocated for the EU to assume a more prominent role in space policy (R2, 5). This shift created uncertainty for ESA, which views itself as the primary space agency for Europe (R1). Since ESA is not represented in the EU legislature, it relies on the support of EU Member States in the Council. Countries like the Netherlands and the Nordic states typically maintain a 'no duplication' stance, asserting that the EU should not undertake tasks already managed by ESA (R4, 8, 12, 13). These Member States wanted to give ESA a more prominent role than was originally envisioned in the Commission's proposal, advocating for the regulation to explicitly state that ESA could contribute to IRIS^2 through optional programs. Additionally, it was important for some Member States that ESA remained the contract authority, meaning it was the organisation awarding contracts to companies instead of the Commission (Bundesrat, 2022; R4). However, despite some Member States supporting a greater role for ESA in the IRIS^2 program, none of them preferred to launch a similar program within ESA. It is widely recognized that ESA cannot execute a program of this nature due to its intergovernmental and civil structure. Moreover, such a program would conflict with ESA's primary mission, which focuses on scientific research and technology development (R4, 7).

4.5.3 Capabilities

The capabilities of the MS are the same as in issues 1 and 3 and will therefore not be discussed in detail. The larger MS like France and Germany are expected to have more influence due to their population size and larger administrations. Apart from this, the capabilities of MS are expected to be quite similar.

Because this issue has special relevance for the Commission, as it discusses its level of autonomy in the implementation of the IRIS^2, it is worth mentioning that the Commission has the capability to revoke a proposal if the Council or the Parliament makes amendments that the Commission does not agree with. The likelihood of the Commission using this capability will be discussed below.

4.5.4 Actor constellation

The actor constellation on this issue has on the one side a pro-ESA coalition consisting of pro-ESA EU Member States who want a more prominent role for ESA in the implementation of

IRIS^2. On the other side, there is the pro-EU coalition consisting of the Commission and MS supporting a stronger role for the EU. This coalition wants to limit the role of ESA (Bundesrat, 2022; R1, 4).

The pro-EU coalition is strongly in favour of IRIS^2 as it will strengthen the role of the EU in space. Giving ESA a stronger role in the implementation of IRIS^2 would, however, mean that the EU is being limited as it would have to share more influence with ESA. Although ESA is essential due to its expertise, the European Commission seeks to limit ESA's role to have more autonomy. However, since IRIS^2 inherently enhances the EU's role regardless of the extent of ESA's involvement, it is anticipated that the pro-EU coalition will support the adoption of IRIS^2, even if it includes a strong role for ESA. The coalition would prefer, however, to limit the role of ESA. Since the situation is similar to the previous two issues, I also have the same expectations: if IRIS^2 is adopted with a prominent role for ESA, the pro-EU coalition will have a payoff of 3 while they are expected to have a payoff of 4 if IRIS^2 is adopted with only a limited role for ESA.

The pro-ESA coalition on the other hand, although also in favour of IRIS^2 (Posaner, 2024b), is worried that the continued efforts of the Commission are reducing the relevance of ESA as an organisation. Many MS in the ESA coalition are implementing most of their space policy through ESA, and therefore want the organisation to remain important (R4, 8). There is also considerable overlap between the SMEC and the pro-ESA coalition as ESA's georeturn principle is better for countries with predominantly SMEs. Because of these reasons, I expect the pro-ESA coalition to have a payoff of 2 if IRIS^2 is adopted with a prominent role for ESA and a payoff of 1 if IRIS^2 is adopted with only a limited role for ESA.

If IRIS^2 would not be adopted I expect the pro-EU coalition to have a payoff of -2 and the pro-ESA coalition to have a payoff of -1. The reason why both coalitions have a negative payoff is because of their competitive interaction orientation towards China and the US, just like the previous issues. However, the reason why the pro-EU coalition loses more is because failing to adopt IRIS^2 would mark a setback in the EUs ambitions to play a more important role in the space domain.

The role of ESA	Pro-ESA Coalition		
Pro-EU coalition		Stronger role ESA	Weaker role ESA
	Weaker role ESA	-1 -2 NA	**1** **4**
	Stronger role ESA	**2** **3**	-1 -2 NA

Table 4.4 payoffs of IRIS^2 depending on the role of ESA (NA = Nonagreement)

The game matrix that follows from these expectations is depicted in Table 4.4 and shows a similar situation to issues 2 and 3. Again the battle of the sexes game most closely resembles the situation at hand with two Nash equilibria and each actor preferring a different equilibria. The pro-EU coalition has in both equilibria a higher payoff than the pro-ESA coalition which is where this matrix deviates from a classic battle of the sexes game, although this does not change the outcome. Since there are two equilibria the mode of interaction is needed for ACI to predict which equilibria is more likely to be the outcome.

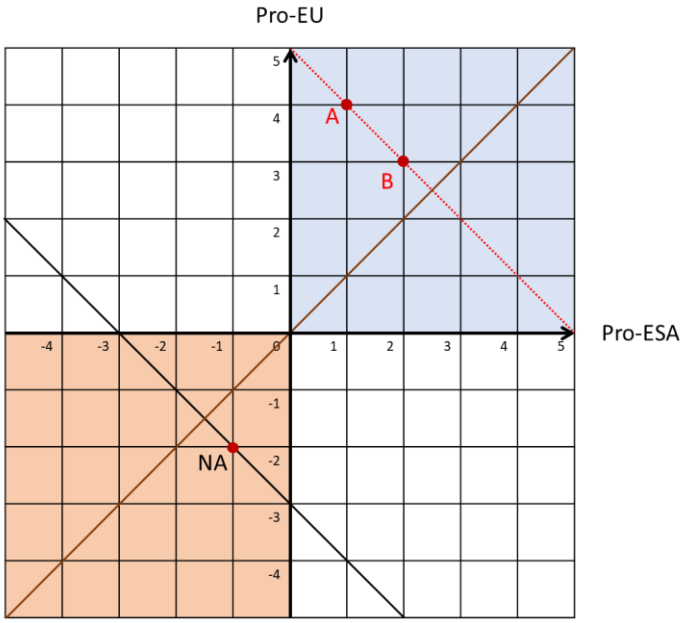
4.5.5 Mode of interaction

The two coalitions do not just include Member States as also the Commission and the Parliament are considered part of the pro-EU coalition. The disagreement occurred, however, only in the Council as this was the only EU institution where the pro-ESA coalition was strong enough to make the topic a subject of discussion. This could be done, because the pro-ESA coalition had a blocking minority, forcing the other MS to take the position seriously (R4). With a majority in favour of the Commission's proposal, and a blocking minority pushing for a more prominent role of ESA, the mode of interaction was negotiated agreement, since both parties had to agree before IRIS^2 could be adopted.

Neither the pro-ESA MS nor the pro-EU MS would accept an outcome that is worse for them than the status quo. Although the Commission itself has no voting right in the Council it can revoke a proposal. This means that ultimately the IRIS^2 regulation must be acceptable for both the pro-ESA Member States as well as the pro-EU MS, the Commission and the Parliament.

As previously discussed under actor preferences the Commission already gains when IRIS^2 would be adopted with a stronger role for ESA. The pro-ESA MS also gain, since they want secure connectivity and cannot do it themselves, but they don’t gain as much as the Commission since they prefer a stronger role for ESA (Bundesministerium für Wirtschaft und Klimaschutz, 2023; R15).

This situation is graphically represented in Graph 4.3 based on the data from Table 4.4. Here the X-axis shows the payoffs of the pro-ESA coalition, while the Y-axis shows the payoffs of the pro-EU coalition. The nonagreement outcome falls in the red area meaning that both coalitions will be worse off if IRIS^2 is not adopted. The blue area shows the 'negotiation space', outcomes in this area constitute a gain for both coalitions. Point A (1:4) represents the outcome if the pro-EU and pro-ESA coalitions agree on a weak role for ESA. Point B (2:3) on the other hand represents the outcome if the pro-EU and pro-ESA coalitions agree on a strong role for ESA. Both options fall within the negotiation space.



Graph 4.3 payoffs of the pro-EU and pro-ESA coalitions (NA = Nonagreement)

Since this contention came up in the Council the two actors are pro-EU and pro-ESA MS. Here the expected outcome is that the pro-ESA MS will get their way as they have less to lose, similar to the expectations from issues 2 and 3. In this case, however, the Commission is expected to be the actor with the strongest preference for a weaker role for ESA as it would be the Commission that would have to give autonomy away (R3). In issues 2 and 3, the Commission did not have a clear preference but with issue 4 its level of autonomy in the implementation of IRIS^2 is at stake. Because of this I also want to consider the option of the Commission revoking its proposal to prevent the pro-ESA MS from adopting a regulation the Commission does not agree with.

Although I expect the Commission to value its degree of autonomy in the implementation highly, I still expect the Commission to refrain from revoking the proposal for two reasons. First, as stated earlier the Commission will gain more from an agreement on IRIS^2 than the Member States. Even with the push for a stronger role for ESA from some MS, it is not likely that this will turn the adoption of IRIS^2 into a perceived loss by the Commission. Instead, the Commission would see its payoffs reduced but they remain positive.

Second, the Commission wants to move fast as it feels a sense of urgency due to the war in Ukraine. Revoking the proposal would cause a substantial delay which the Commission would perceive as a high cost. Because of these reasons, I do not expect the Commission to revoke the IRIS^2 proposal.

With the expectation that the Commission will not revoke its proposal option B is most likely to be adopted, just like with issues 2 and 3.

Hypothesis 4: *ESA will get a stronger role in the implementation of the IRIS² programme since a blocking minority in the Council supports this.*

4.6 Policy outcomes, testing the hypotheses

In this section, the hypotheses of the four contentious issues will be compared to the policy outcome.

4.6.1 Hypothesis 1: adoption IRIS²

4.6.1.1 Congruence between the hypothesis and the outcome

The hypothesis for issue 1 predicted that the IRIS² regulation would be adopted since the hesitant Member States would prefer IRIS² over the alternative which was no constellation at all. This hypothesis is mostly correct since the IRIS² regulation was indeed adopted. The regulation was however adopted very quickly with about 9 months between the Commission publishing its proposal and the regulation being adopted by the Council and Parliament (R5). The voting results were also very positive with 93% of the votes in the Parliament in favour of IRIS² (How they vote, 2023), and unanimity in the Council (Council of the European Union, 2023a). Based on the hypothesis such a quick adoption with so much support was not predicted. The hesitant Member States were expected to create more resistance given that IRIS² is an expensive programme with the main aim of strengthening Europe's autonomy, which the hesitant MS did not find important.

4.6.1.2 Implications

The main reason why the ACI hypotheses assumed that the hesitant Member States would not be very supportive was because of their identity. Member States like Malta, Austria, Germany or Denmark were assumed to have a pacifist identity (R2, 8). Such an identity has been created by pursuing a pacifist policy agenda for many years. One possible explanation for why IRIS² was adopted quickly is that at least some of the traditionally pacifist Member States have changed their position and are now more focussed on security. It will take time however before a change in position turns into a new identity. One example is Denmark which ended its 30-year-long opt-out on EU defence policy through a referendum in 2022 because of the war in Ukraine (Murray, 2022; R17). This change in Danish security policy has also impacted its position on space policy, as Denmark now wants to support the strategic use of space

applications (R17). This recent shift in the Danish position was not taken into account when determining the preferences of Denmark, since it had historically been focussed on the peaceful use of space (R8).

The quick adoption of the IRIS^2 regulation shows that not only the Commission and Parliament but also the vast majority of the Member States felt a sense of urgency and supported the regulation. The narrative from the Commission, advocating for IRIS^2, was heavily focussed on strategic autonomy, this was only strengthened when the war in Ukraine broke out (R4). Given the focus on strategic autonomy, it is unlikely that Member States would have supported the regulation, if they were not convinced of the need for strategic autonomy. The war in Ukraine seems to have acted as a catalyst, making countries more willing to invest in strategic autonomy (R5, R11).

It is also noteworthy that the national governments already agreed to implement Govsatcom two years prior, showing that they perceived a need for secure satellite communications. The Commission and the MS soon realised that Govsatcom with its modest funding could not cover the demand (Pultarova, n.d.; Selding, 2019). This created a need for a more extensive programme. The Commission used this to push for IRIS^2. Recital 6 of the adopted regulation also mentions this by stating that IRIS^2 was needed because Govsatcom could not keep up with the demand (EU Regulation 2023/588, Recital 6). The Commission has used the fact that Govsatcom could not meet the demand to push for more integration. Also, the interviewees agreed that the initial idea for IRIS^2 came from the Commission and that the Commission was a strong advocate (R1, 3, 4, 5).

As described in the background section it was not easy to find support for Govsatcom initially. In the early 2000s, the MS did not want to share national satellite communication (satcom) capabilities (Henry, 2016). Now we have witnessed a shift from MS not willing to share national satcom capabilities to MS agreeing to delegate satcom capabilities to the EU level within ten years (Henry, 2016; R3, 5). The Commission has, throughout this shift advocated for more integration in this field and discussed already an IRIS^2-like system in 2016 (Henry, 2016). It is therefore very conceivable that the Commission played a more important role than ACI predicted.

4.6.2 Hypothesis 2: funding through the EU budget

4.6.2.1 Congruence between the hypothesis and the outcome

The hypothesis for issue 2 predicted that the IRIS^2 programme would be funded out of the EU budget since the Council had a stronger position than the Parliament in the negotiations. This hypothesis is confirmed by the adopted IRIS^2 regulation. Article 13, which describes how the programme will be funded, states that the programme will be funded through the EU budget. The wish from the Council to not take any substantial funding away from the Galileo and Copernicus programmes was also respected (Bundesrat, 2022; R4). The Parliament on the other hand did not manage to arrange partial funding from the Member States. Besides that, the Parliament also did not manage to prevent funding from being taken away from the NDICI, as 150 million euros from the NDICI will go to the IRIS^2 programme (EU Regulation 2021/696, Article 13.2).

Although the IRIS^2 will not use 'fresh money' the MS did agree to involve ESA in the IRIS^2 programme by letting ESA create optional programmes aimed at technology development (issue 4). This means that the ESA MS will contribute some funding towards IRIS^2 through these optional programmes of ESA. Within these optional programmes, ESA's georeturn principle applies.

4.6.2.2 Implications

This outcome is a strong confirmation of the hypothesis. It also affirms that the Council has a stronger position than the Parliament. Where both institutions had preferences on how IRIS^2 should be funded, we see that the preferences of the Council were respected while the preferences of the Parliament were largely ignored. The weaker position of the Parliament in the negotiations was also confirmed by an interviewee from the Parliament (R5). This is not to say that the Parliament had no effect at all on the final regulation. The Parliament pushed for more environmental sustainability requirements in the regulation (European Parliament, 2023) which were added in Article 8. The Council had no strong opinion on this topic which is why the Parliament could add it to the regulation (R4, 5).

The addition of optional programmes from ESA to IRIS^2 shows how the MS did not want to increase the EU budget but were willing to invest more in IRIS^2 through ESA (R16). A reason for this could be that within the optional programmes, the georeturn principle applies which benefits the MS with predominantly SMEs, however, this cannot be stated with certainty.

4.6.3 Hypothesis 3: inclusion of SMEs

4.6.3.1 Congruence between the hypothesis and the outcome

The hypothesis for issue 3 predicted that a 30% threshold for SME involvement would be added to the IRIS^2 regulation since there would be a blocking minority in the Council demanding it. When the hypothesis is compared with the policy outcome, we see that this is mostly correct. Article 21 of the regulation states that at least 30% of the value of the contract needs to be subcontracted with the specific aim of enabling cross-border participation of SMEs. Not only does this article ask for the inclusion of SMEs, which should favour Member States with many SMEs, but it also mentions 'cross-border participation' emphasising the intent to include many countries in the procurement similar to the georeturn principle of ESA.
A big difference with the georeturn principle however is that the cross-border participation is not binding and even the 30% threshold is not strictly binding (R11). This weakens the hypothesis somewhat, especially since it seems now, in the implementation phase, that the 30% threshold will not be reached (R5, R16).

The regulation also includes Article 7, which lays out multiple ways in which the Commission aims to strengthen SMEs through the IRIS^2 regulation (EU Regulation 2023/588, Article 7). Article 7.2(c) is especially important for SMEs as it ensures that SMEs can deliver services to end-users instead of only being sub-contractors for the LSIs (R16). So far, the Commission has not acted on Article 7.2(c) however creating uncertainty for SMEs (R16).

The hypothesis that a 30% threshold would be included to support SMEs is therefore correct, however, the non-binding nature of the threshold and the subsequent problems with the implementation of the supportive measures for SMEs creates doubt over how much the SME coalition of Member States has managed to do for SMEs.

4.6.3.2 Implications

This issue has shown the influence of the space industry on the preferences of MS. The reason why this was such a contentious issue is that MS feel the need to protect and promote their domestic space industries, leading to differing views on SME inclusion based on the composition of their national industries. The attempt to include an SME threshold therefore reflects the desire to replicate the protective effects of ESA's georeturn principle within the EU framework.

4.6.4 Hypothesis 4: A strengthened role for ESA

4.6.4.1 Congruence between the hypothesis and the outcome

The hypothesis for issue 4 predicted that ESA would get a stronger role in the implementation of the IRIS^2 Programme since there would be a blocking minority in the Council demanding it. This hypothesis is partially confirmed. Article 16 is added to the regulation which allows MS to contribute to the technology development for IRIS^2 through ESA optional programmes. This article was not part of the Commission's proposal and can be seen as a win for the pro-ESA Member States (R4). Apart from the ability for ESA to participate through optional programmes, nothing substantial has changed, however. Based on the ACI hypothesis one would expect bigger changes. The EU is still the contracting authority and ESA is only involved in technology development.

4.6.4.2 Implications

From an ACI perspective, it is hard to explain why the pro-ESA coalition was not stronger. The lower payoffs compared to the pro-EU coalition should have given them a stronger bargaining position. The Commission also felt a sense of urgency (R3, 5) which also should have made them more willing to compromise. Issue 4 can therefore only partially be explained by ACI. These findings could indicate that the Commission has more influence than ACI predicts but this cannot be stated with certainty based on the available data.

4.7 Answer third sub-question

Sub-question 3: How did the actors within the institutional setting affect the policy outcome of IRIS^2?

When looking at the four contentious issues that have been analysed there is a clear trend. With the first issue, all actors agreed on one common solution, the adoption of IRIS^2, despite their unequal payoffs. In the subsequent three issues the situations were comparable, both parties agreed on the adoption but disagreed on the implementation. Because the payoffs in these scenarios were unequal the party with the lowest overall payoffs had an advantage in the negotiations and used this to get concessions from the party with the higher payoffs.

The institutional setting played an important role in making these situations possible. In line with the predictions from the theoretical chapter the QMV in the Council gave MS significant power. Both in issue 3 and issue 4, blocking minorities forced the other side to make concessions. If the Council had voted by simple majority it is likely that there would not have

been a 30% SME threshold and that ESA would have had a more limited role in the implementation. However, since a true counterfactual is missing this cannot be stated with certainty.

The adoption of the programme can overall be seen as a win for the Commission and Parliament as both institutions were strongly in favour of IRIS^2. Also, the security-focussed MS like France were strong proponents. The more hesitant MS like Germany were not as strongly in favour but managed to secure some of their national interests in the programme. The clearest example of this is the introduction of the SME threshold where the security focussed MS and the Commission had to compromise.

Chapter 5: Conclusion

5.1 Resolving the research question

5.1.1 Summarizing sub-questions

In seeking to understand the recent increase in EU activity in the space domain, this thesis first examined the institutional setting in which EU space policy is formulated, identifying the key actors and their roles. The analysis then focussed on the specific case of IRIS^2, uncovering four main points of contention during its policymaking process: the perceived necessity of the program, disagreements on funding sources, the inclusion of SMEs in procurement, and the role of ESA in the implementation.

By applying the ACI framework, this thesis explored how the preferences and capabilities of the European Commission, the European Parliament, and the Member States, combined with the institutional setting of EU policymaking, influenced the resolution of these contentious issues, ultimately shaping the IRIS^2 program.

The analysis of the first contentious issue revealed that, while all actors supported IRIS^2, there is differentiation regarding the level of support. The Commission, Parliament, and the security-focussed Member States perceived the need for the program more acutely than Member States less focussed on security. This explains the adoption of IRIS^2, even though it was adopted more quickly than anticipated. The speed of adoption can be attributed to a shift in Member States' attitudes, with an increasing focus on security and defence.

The second issue highlighted the Council's stronger position relative to the Parliament during negotiations. The Council and Parliament disagreed on the funding source for IRIS^2, and, consistent with ACI's predictions, the Council's position prevailed. The program was more important for the Parliament, but a group of sceptical Member States formed a blocking minority, weakening the Parliament's negotiating power.

The third issue illustrated the importance of domestic space sectors in shaping national government positions. Member States with space sectors predominantly composed of SMEs successfully lobbied for the inclusion of a 30% SME threshold in the regulation. Once again, the Council played a decisive role in this outcome.

The fourth issue revealed a divide among Member States: some favoured strengthening the Commission's role in space, while others aimed to preserve ESA's prominent role. Although ACI predicted that pro-ESA Member States would succeed in enhancing ESA's role within IRIS^2's implementation, this was only partially realized. These findings suggest a potential

increase in the Commission's influence within the space domain, although further evidence is needed to confirm this trend.

5.1.2 Answering the research question

This brings me to answer the research question:

What explains the increasing role of the EU in the space domain since 2021?

While the findings cannot provide a complete and definitive answer, they offer significant insights into the process of EU space policy creation and contribute to the overall explanation.

The first, and perhaps most crucial part of the explanation is the increased willingness of Member States to delegate competencies in the area of security and defence to the EU. Historically, Member States were reluctant to cooperate extensively in this policy area. However, this shift in willingness allowed the EU to fill a gap in the European space domain, particularly in facilitating cooperation on security and defence applications in space, a role not covered by ESA, which traditionally focussed on peaceful uses of space.

Second, the strong commitment of the Commission, and to a lesser extent the Parliament, to enhance the EU's activity in space was essential for the adoption of IRIS^2. Despite the cooperation of many Member States, a significant portion remained sceptical. The Commission and Parliament were willing to make multiple concessions to these more reluctant Member States to ensure the program's adoption. These concessions included funding the program through the EU budget without requiring additional contributions from Member States, including a 30% SME threshold to satisfy Member States with SME-dominated space industries, and allowing ESA to participate through optional programs, thereby strengthening its role within IRIS^2. Without the Commission and Parliament's willingness to make these concessions, the program would likely not have been adopted.

5.1.3 Generalisation

Since the analysis was limited to the adoption of IRIS^2, the generalisability of these findings needs to be discussed. This section will therefore describe how the findings can be applied to the overall trend of the EU becoming more active in the space domain since 2021.

When comparing the adoption of IRIS^2 to the adoption of other recent EU space policies it can be observed that the institutional setting in which IRIS^2 was adopted is the same as the institutional setting in which other EU space policies were adopted. The actors involved in the adoption of IRIS^2 were also the same as those engaged in the adoption of other EU space

policies. With the same actors and the same institutional setting, the capabilities of the actors were also comparable. The preferences, however, are more complex. Different developments, such as the adoption of the EU Space Programme or the publication of the EU SSSD, affect the space domain in different ways, which may have led to different positions among the actors. However, the underlying preferences are still expected to be the same, as ACI assumes preferences to be relatively stable and these developments occurred in close succession. This means that the actors' preferences, and therefore the contentious issues, can most likely be generalized to the broader development of EU space policy. However, it is important to recognize that the effect of a particular contentious issue on a policy outcome is dependent on the specific policy under consideration. For instance, during the discussions on the EU SSSD, the involvement of SMEs (issue 3) likely played a minor role, whereas the importance of security, as highlighted in Issue 1, likely played a much larger role.

5.2 Contribution to the scientific literature

As mentioned in the introduction this thesis contributes, in particular, to three ongoing discussions in the scientific literature: the mechanisms for European integration, the influence of the European Parliament and the behaviour of Member States in the Council.

5.2.1 Integration theories

In the case of IRIS^2, we observe a gradual progression: initially, large Member States had their own domestic secure satcom capabilities; this evolved into the Govsatcom initiative, where national and commercial satcom capabilities were pooled and shared at the EU level; and ultimately led to the adoption of the IRIS^2 programme, where the EU will operate its own secure satcom capability. As described in the analysis this development was initiated and pushed by the Commission. The strong role of the Commission as a supranational actor is in line with the expectations of neofunctionalism.

The adoption of IRIS^2 also included some elements that align with the LI account of European integration. First, issues 3 and 4 were resolved through interstate bargaining as LI predicts. Second, the domestic industries had a strong influence on the positions of MS. However, the second point is partially negated as security concerns were also important for MS which is not in line with LI (Moravcsik, 1998, p. 28).

When the adoption of IRIS^2 is viewed from the perspective of European integration, neofunctionalism gives a more complete account than LI. This research therefore strengthens

neofunctionalism and is also in line with the findings of Köpping Athanasopoulos (2016) who found that neofunctionalism could explain the adoption of the Galileo programme.

5.2.2 Weak Parliament

This research also contributes to the literature on the position of the European Parliament by analysing its position and ability to influence the adoption of the IRIS^2 programme. Contrary to some earlier research (Héritier et al., 2019; Hix et al., 2006; Stacey, 2003), this thesis showed that the European Parliament was the weakest of the three EU institutions, and could only change the proposal in areas where the Council did not have a strong preference. This finding is supported by Bauer et al. (2015) who find that, despite the Lisbon Treaty, the Parliament is still relatively weak in budgetary negotiations.

The weak position of the Parliament is worrying as it is the only directly elected institution of the EU. As highlighted in the introduction, scientific literature generally agrees that a stronger Parliament would enhance the EU's input legitimacy (Nicoli, 2020, p. 22). However, in the area of space policy, a key reason for the Parliament's weaker position is its lack of information and expertise. This deficiency hampers the Parliament's ability to adopt effective policies. Consequently, even if the Parliament were to gain more influence, without a corresponding increase in information and expertise, it could lead to less effective policies and compromise the EU's output legitimacy. Thus, while addressing the input legitimacy issue, this could damage output legitimacy. Therefore, efforts to strengthen the Parliament should be coupled with initiatives to enhance its access to information and expertise.

5.2.3 Logic of consequentiality or appropriateness

As described in the introduction, there is a discussion in the literature on which logic can best explain the behaviour of MS in the Council: the logic of consequentiality (Dewulf et al., 2020, p. 1) or the logic of appropriateness (March & Olsen, 2011, p. 480). In the case of IRIS^2, the logic of consequentiality seems to explain the behaviour of MS best. Throughout the four contentious issues, it is shown how the MS behaved in a way that would maximise their payoffs. My data has shown no examples of MS acting against their self-interest. Although I cannot exclude that the logic of appropriateness might have played a role, I can state that the logic of appropriateness is not required to understand the outcome as the outcomes are all in line with the logic of consequentiality. This finding strengthens ACI since it uses the rational-choice-based logic of consequentiality to explain the behaviour of actors.

5.3 Societal relevance of the findings

As highlighted in the introduction, this thesis has relevance for policy makers and others who are involved in European space policy as it analyses the recent changes in the space policy environment. The thesis has special relevance for three subjects: the functioning of the European space domain, the EU's increasing involvement in defence and security policy, and the relationship between the EU and ESA.

5.3.1 Functioning of the space domain

The analysis shows that MS have become more supportive of European integration when it comes to security and defence applications in space and that the Commission and Parliament are willing to increase the funding for space applications. Also, the inclusion of the domestic space industries, especially SMEs, and the role of ESA are important enough for some MS that they form blocking minorities to protect their interests. Furthermore, the difference between the German and French positions are described as well as how these different positions impacted the policy outcome. By providing this information about the preferences of key actors this thesis can help policy makers to find common ground and reduce conflict.

5.3.2 Increasing role of defence

This research also contributes to the discussion regarding the increasing role of the EU in defence policy, something that MS have long resisted. In the case of the adoption of IRIS^2, the EU's increased involvement in the area of security and defence can be explained by: first, a shift in MS preferences towards strategic autonomy and second, strategic competitors like China and the US developing capabilities that are too expensive and complex for MS to develop individually. Together this provides the willingness and the need to delegate more to the EU level to prevent Europe from falling behind strategically. While the findings of this thesis cannot be directly applied to the overall increase in EU involvement in defence policy, they do shed light on a specific aspect of this development (IRIS^2), thus contributing to the discussion on why the EU is becoming more involved in defence policy.

5.3.3 EU – ESA

This thesis also contributes to the discussion on the relationship between ESA and the EU. Although the EU is increasing its involvement in the space domain its activities have mostly been complementary to what ESA is doing. ESA could not initiate a programme like IRIS^2 as the organisation is not fit for security and defence applications of space. ESA is, however, experienced in carrying out technology development which is why it will be involved in this

phase of the IRIS^2 programme. The analysis showed that the preferences of actors played a role with MS and the Commission having different preferences regarding the extent to which ESA should be involved. Amongst the MS this is most visible between France and Germany where France supports a stronger role for the Commission while Germany wants ESA to retain its central position in the European space domain.

5.4 Reflecting on actor-centered institutionalism

Having applied actor-centered institutionalism, I observed both the versatility and the limitations of the framework. The ACI framework is versatile because it makes few assumptions. However, this adaptability also necessitates the collection of substantial case-specific data before it is possible to formulate concrete hypotheses. In this thesis, the extra data led to more specific hypotheses that were mostly proven correct thereby demonstrating the explanatory power of ACI.

Also, the more general predictions at the end of the theoretical chapter, based on the institutional setting, were mostly correct. One prediction that was not correct, however, was the one that predicted that the Parliament and Council would have equal legislative power if the proposal was not controversial. Given the speed with which IRIS^2 was adopted and the support for the programme in both the Parliament and the Council, it cannot be called a controversial proposal while the Council did have a stronger position. Increasing the knowledge and expertise of the Parliament with regard to space policy could help to make the institutions more equal, but I expect that the QMV still puts the Council in a stronger position.

A weakness of the ACI framework itself is how it determines the preferences of actors. The components it uses are abstract and hard to apply. During the analysis, it was often not possible to estimate the positions of actors on specific topics using ACI's components. 'Interests' and 'norms' are defined in a way that is very abstract while 'identity' is hard to operationalise as it is not clear what constitutes identity. In the analysis, I got around this problem by describing the preferences based on my interview data.

A characteristic of ACI that limited its explanatory power in the case of this thesis is its focus on structural and ongoing dynamics to explain policy outcomes rather than shifts in preferences and external triggers. From the interview data, it became clear that the IRIS^2 programme would not have been adopted 5 years ago and that the war in Ukraine played an important role in shifting the preferences of the hesitant MS to support IRIS^2. Although these developments are

important for understanding the increased involvement of the EU, the ACI framework does not take them into account.

I argue that shifting preferences and external triggers can be included in the ACI framework, although it would deviate from a standard ACI analysis. By measuring the preferences of actors at different points in time, it is possible to analyse if the preferences are shifting and, if so, if an external shock could have caused this. This information can subsequently become part of the description of actor preferences in the ACI framework, the rest of the framework remains unchanged. Measuring the preferences at different points in time requires more data which is why I expect that this extra step is not worthwhile for most ACI analyses. However, it could prove useful if the researcher expects that an external shock or a shift in preferences more generally is necessary to explain the policy outcome using ACI.

5.5 Limitations of the research

5.5.1 Limitations

This research has some limitations that need to be kept in mind. The first limitation is the scope. The question of why the EU has become more active in the space domain since 2021 cannot be answered definitively by a single case study on the adoption of the IRIS^2 regulation. The findings are specific to the adoption of this regulation although some findings are likely to be more broadly applicable.

Second, my research design does not exclude survivorship bias. My thesis uses the case of IRIS^2 to analyse the main points of contention when it comes to EU space policy. However, by focusing on a programme that has been successfully adopted the risk of survivorship bias is introduced, as the issues identified in such cases may not have been severe enough to prevent the programme's adoption. It is possible that other programmes were never proposed because the European Commission anticipated the presence of more significant issues that would preclude their adoption. While this is a valid concern and survivorship bias cannot be excluded, I do want to mention that the issue of European integration in the area of defence, was most likely the biggest potential issue and although this issue was present in the case of IRIS^2 it did not prevent its adoption.

The third limitation of this research is the potential for hindsight bias. Ideally, the congruence method requires the formulation of hypotheses based on theoretical principles before examining the case to test their validity. However, the application of the ACI framework necessitated the use of case-specific data, which, in this instance, was obtained through interviews with experts

after the programme had already been adopted. Although the hypotheses were constructed using the ACI framework, it is possible that awareness of the outcome may have subconsciously influenced my reasoning or the reasoning of the interviewees. Consequently, I cannot entirely exclude the possibility that hindsight bias affected the analysis.

5.5.2 Recommendations for future research

Based on the limitations that were mentioned, a suggestion for future research would be to focus on a policy proposal in development and see how the preferences compare to the outcome. Hindsight bias and survivorship bias can be excluded if the preferences are analysed before the proposal has entered the policy adoption phase. A potential case for this is the upcoming EU space law for which a proposal is currently being written by the Commission. The expectation is, that this proposal will be sent to the Council and Parliament in the coming months.

The research showed how the quick adoption of IRIS^2, and the relatively minor increase in the role of ESA could not be explained well by ACI. One possible explanation, that was mentioned but could not be verified was the explanation that the Commission had a more influential role than ACI predicted. It could therefore be useful for future research to analyse the role of the Commission in the process of space policy-making more closely.

Despite its limitations, this research provides valuable insights into the complexities of European space policy-making and increases our understanding of the evolving role of the EU within this policy area.

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Appendix: Table of interviewees

Reference code	Organisation	Function
Respondent 1 (R1)	ASD Eurospace	Policy manager EU & ESA space policy
Respondent 2 (R2)	Centre national d'études spatiales (CNES)	Director of European and international affairs
Respondent 3 (R3)	Netherlands Space Office (NSO)	Policy advisor on communication for ESA and the EU
Respondent 4 (R4)	Dutch Ministry of Economic Affairs and Climate	Dutch negotiator in the Council of the EU on IRIS^2
Respondent 5 (R5)	European Parliament	Assistant of MEP Christoph Grudler (Rapporteur on IRIS^2)
Respondent 6 (R6)	European Commission	Policymaker
Respondent 7 (R7)	No permission to share	No permission to share
Respondent 8 (R8)	Belgian Federal Public Planning Service of Science Policy (BELSPO)	Belgian representative on space in the Council of the European Union
Respondent 9 (R9)	Norwegian Space Agency (NOSA)	Director PNT, satcom and security
Respondent 10 (R10)	European Commission DG DEFIS	National Expert in Professional Training (NEPT)
Respondent 11 (R11)	BHO-legal	Legal advisor on procurement of EU space projects
Respondent 12 (R12)	Dutch Ministry of Foreign Affairs	Dutch representative on space in the Council of the European Union
Respondent 13 (R13)	Netherlands Space Office (NSO)	Dutch national expert on the EU space programme regulation
Respondent 14 (R14)	Dutch Ministry of Infrastructure and Water Management	Dutch representative in the EUSPA administration board
Respondent 15 (R15)	Spanish Space Agency	Director of the Space Agency
Respondent 16 (R16)	SME4SPACE	Chairman
Respondent 17 (R17)	Danish Ministry of Higher Education and Science	Senior Advisor