

# Weaponization of space: a French perspective

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## Abstract

We remind of the programmes that France runs in the following areas: nuclear weapons, anti-satellite systems, satellites used for military information and spatial electronic warfare. Then we discuss the strategy and we report on relevant aspects of the campaigns of the French peace movement which are relevant to nuclear weapons and militarisation of space. We also raise the question of the risk of the weaponization of space by France in the recent news.

## Keywords

France, nuclear weapons, anti-satellite systems, military satellites, peace, weaponization of space, strategy, pacifists.

## 0 – Introduction

First, let us remind of the French organization fighting for peace. *Mouvement de la Paix* (French Peace Movement) was founded in 1948 and in 2018, it is celebrating its seventieth anniversary. It was created after World War II by prominent personalities such as Pablo Picasso, Frédéric Joliot-Curie and Raymond Aubrac, to oppose wars, and especially nuclear wars. Since then it has opposed wars and the French military involvement in Africa, Afghanistan, Syria, Yugoslavia, etc. It joins the fight against colonialism, nuclear weapons, new weapons technologies, and more generally works towards a more peaceful and secure world for all, through diplomacy and dialogue and the building of mutual respect between all countries and people on the planet. Its philosophy also encompasses the recommendations for the Millennium Development Goals (MDGs) as adopted by the United Nations (UN) in 2000. Building for peace locally and globally, joining the fight against racism,

standing up for human rights and opposing nuclear weapons. Its motto could be “never do to others what you don't want them to do to you”.

French peace movement organises protests against French missiles and nuclear forces and each year it celebrates the UN International Day of Peace, September 21<sup>st</sup> [1]. It seeks to develop relationships with foreign countries and people based on confidence and respect and it aims to contribute to make France once again a country that honours human rights and a peaceful way to solve conflicts based on mutual respect and diplomacy.

This paper aims to settle the state-of-the-art of the French rule to weapons and nuclear power in space, and to have a look on peaceful action against it. This article does not attempt to discuss issues related to the US missile defence system, which have been hot topics for a long time in Europe and around the world [2].

The following three sections will focus on France's current level of participation or not in the militarization of space.

This article According to non-classified secret defence information available in free access, we remind briefly of the programmes that France runs, either parallel to, or in total collaboration with, other NATO countries in the following areas:

1. Nuclear weapons,
2. Anti-satellite systems,
3. Satellites used for military information and spatial electronic warfare.

Note that France does not participate with NATO on nuclear weapons even after becoming totally reintegrated within NATO ten years ago. Important in the context remember too that France is the 3<sup>rd</sup> biggest arms exporter in the world. France sold weapons to more than 80 countries between 2013 and 2017. French exports increased by 27% compared to 2008-2012 [3].

France is also a leading country for the use of nuclear power to generate electricity and the concept of technologies that have “dual use” applications i.e. for military and civilian purposes at the same time, is of increasing importance to research and development in the development of nuclear, imaging and electronic systems and devices.

Some of those programmes may be developed in cooperation with the United States, as its military, space, electronics and aircraft industry can be in direct agreement in some areas, or not.

In the fourth part of this paper, we comment on French public opinion is in favor of France going into a process of

military denuclearization, and we discuss the strategy of pacifist in the context of the vote of the Nuclear Weapon Ban Treaty (NWBT) at the UN.

The fifth part of this paper is talking about peaceful action against French missiles programmes and weaponization of space including satellites used for military information. It is illustrated through concrete examples of peace protests and campaigns.

The sixth part of this paper deals with questions about the French weapons projects of our military satellites after the disturbing recent remarks of the French Minister of the Armed Forces.

Finally, we will try to conclude and draw perspectives.

## **1 – Nuclear weapons**

France has approximately 300 nuclear weapons. The most recent French nuclear test was in January 1996. France, however, continues to perfect this type of weaponry. Programmes for new generations of nuclear weapons [4 – 6] should involve CEA/DAM (*Commissariat à l'énergie atomique*) although some changes could be expected after the “Brexit” vote [7]. One of the major research projects is the Megajoule Laser, which is part of the “Simulation” programme and which became operational in 2014.

This powerful laser is used to study materials under extreme conditions, comparable to those of a nuclear explosion, in a hyper confined structure. It is currently being used to complete development of the new generation of French M51 missiles [8]. These are the short, medium and long range ballistic missiles as well as those with an intercontinental range for use on French

nuclear submarines. M51 first missile was fired from a submarine in 2016.

It should be noticed that French peace movement is fighting against those expansive and dangerous programmes and proposes the abolition of those weapons. For instance, it demonstrated against the successful M51 missile fire as reported in this newspaper referenced here [9].

## 2 – Anti-satellite systems

The 1967 Outer Space Treaty forbids the placing of weapons of mass destruction in orbit around the Earth and to date, only 3 nations (USA, Russia and China) have projects to develop anti-satellite (ASAT) weapons with the ability to destroy satellites. France seems not to have an ASAT programme. There are risks involved in destroying satellites in space involving possible damage by debris travelling at 25-30,000 km/hr from an impact on other satellites or on the International Space Station which has cosmonauts on board.

Note that some analysts have argued that the 2015 US Space Act [10] violates the Outer Space Treaty by recognising that space resources, including water and minerals, can be owned. This encouragement to exploit space would appear to contradict the Outer Space Treaty which states that "outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means".

## 3 – Satellites used for military information and spatial electronic warfare

There are no international laws or agreements on the use of intelligence gathering or observational satellites used

for military purposes [11]. France still has two second generation military satellites - Helios 2A and Helios 2B [12]. The first of the previous generation, Helios 1A, was launched in 1995. Two other satellites with imaging systems useful for gathering information are Pléiades 1A and Pléiades 1B.

The international programme known as "MULTinational Space-based Imaging System for Surveillance, Reconnaissance and Observation" (MUSIS) [13] has six partners - France, Italy, Belgium, Germany, Greece, and Spain – and allows them to share imagery from various military satellites through a common, generic user ground segment (UGS). As a project of the European Defence Agency (EDA), it is managed by the "*Organisation conjointe de coopération en matière d'armement*" (or OCCAR, the Organisation for Joint Armament Cooperation) which facilitates and manages collaborative armament programmes through their lifecycle between Belgium, France, Germany, Italy, Spain, and the UK. MUSIS was intended to provide access to a number of missions:

- the successor of French Hélios 2 called *Composante Spatiale Optique* (CSO – a French military Earth observation satellite programme);
- the successor of German SAR-Lupe called SARah;
- the successor of Italian COSMO-SkyMed called COSMO Second Generation (CSG);
- the Spanish wide area optical satellite Ingenio (formerly known as Seosat).

The first two systems are entirely military, but the other two are dual-use.

One satellite, CSO-1, was launched 18<sup>th</sup> December 2018 from the Centre Spatial Guyanais – near Kourou, French Guiana.

From sun-synchronous orbit at an altitude of about 800 km, CSO-1 is expected to be able to image the Earth at resolutions of about 35 cm [14]. Two other satellites, CSO-2 and CSO-3, are expected to be launched respectively in 2021 and 2022. All of these satellites would be under the control of the French Ministry of the Armed Forces. They could provide information to be used for modelling the terrain and for producing maps for guiding missiles and drones and helping plan and execute airstrikes by military airplanes.

Difficult to write much about electronic warfare and space weapons as it is secret by definition and it affects the interests of the nation. It could concern weapons which use particular technologies to dazzle or destroy a target or satellite, or the development of radars.

#### **4 – The battle of public opinion and the strategy of pacifists**

It is interesting to ask the question of what the French population thinks about the programs detailed previously. More generally, among the points about which it is useful to question, are the French still attached to the force of nuclear dissuasion? The national daily "*La Croix*" and the French Peace Movement commissioned a survey of 1001 people, thanks to the IFOP polling institute. The results of this survey were published on July 5, 2018, pages 1 to 3 of the daily "*La Croix*" [15]. The main lesson from this poll is that a majority of respondents (67%) want France to ratify the treaty to "ban" nuclear weapons. It must be emphasized that French public opinion is generally not very interested in questions concerning nuclear weapons. This result shows that there is an important base among the French, who wants France to abandon its military nuclear strike force. Pacifists are therefore likely to be heard and understood when they express their desire to go against this type of weaponry.

For a long time pacifists have sought to reduce the risk of nuclear weapons. This resulted in a series of agreements and treaties mainly between the United States and the USSR and then Russia. In 2017, the new strategy of the International Campaign to Abolish Nuclear Weapons (ICAN) led to the UN vote on the Treaty on the Prohibition of Nuclear Weapons known as NWBT [16, 17]. In the vote on the treaty text, 122 were in favor, 1 voted against, and 1 abstained. 69 nations did not vote, among them all of the nuclear weapon states and all NATO members except the Netherlands. ICAN has been awarded the 2017 Nobel Peace Prize. Beatrice Fihn, director of ICAN, explains how transnational Civil Society Realized the NWBT in an Interview [18].

Rather than trying to convince the authorities of countries that have the nuclear weapon to reduce their stocks, the pacifists have changed their strategy: they are now trying to convince the countries that do not have the nuclear weapon to impose the prohibition of this type of weapon of mass destruction.

The French government could always say that it will not be constrained by the ratification of an international treaty for the abolition of nuclear weapons. But there is a precedent that should make French authorities think. This is the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water that France had not signed. This treaty is known as the Partial Test Ban Treaty (PTBT). It was signed in 1963. Faced with the fear of international trials, France has however stopped its nuclear tests in the atmosphere.

In concrete terms, the pacifists' strategy of change on a global scale aims to force countries like France, which possesses

nuclear weapons, to go towards the signing of the NWBT.

## **5 – Peace campaign against nuclear weapons and militarization of space**

French peace movement is involved in campaigns against all such weapons and it protests, for instance, at Eurosatory, the international Defence and Security industry trade fair, held every two years in the Paris-Nord Villepinte Exhibition Centre. French peace movement asks its own government to sign the Treaty on the Prohibition of Nuclear Weapons and to significantly reduce military spending. Pacifists are also completely opposed to their new government leading wars and to its military presence in approximately 15 foreign countries [19 – 21].

French peace movement condemns and considers the US missile defence system not as a defence system but an instrument of aggression, linked with the possibility for the US to attack countries that they potentially consider to be enemies, such as Russia, China or Iran without fear of retaliation. This shield puts France in danger of replicas of countries de facto designated as enemies.

Peace campaign is to be helpful for contributing in building a world of peace and security and avoid French programmes of militarization of space [22 – 27]. There are strong arguments against the absurdity of weapons of mass destruction, such as nuclear weapons, and the shocking increase in military budgets while, at the same time, our government attacks social welfare, social security, pensions, and education.

The action for peace in France is a question of developing peaceful strategies and of strongly opposing some of the policies of the French government as it is illustrated in the following cited references

[28 – 37] by demonstrating, protesting, and informing. French public opinion can evolve in favor of a questioning of military nuclear and the militarization of space. France, like the other countries possessing the nuclear weapon, will be then able to go towards an abandonment of these weapons of massive destruction. While the pacifist strategy against the militarization of space is clarified thanks to the NWBT, it is more complicated to implement against military-use satellites.

## **6 – Real concern over plans for the French militarization of the space**

Is France preparing to violate the universal principle that prohibits the militarization of space? [38] This question is unfortunately of topicality: Ms Florence Parly, Minister of the armed forces, would justify it after an alleged charge of spying data of a French military intelligence satellite revealed in September, 2018. Is France following in the footsteps of the US, which has just created its sixth army corps dedicated to the militarization of space? If Ms Florence Parly, French Minister of the Armed Forces, declared well on September 9<sup>th</sup>, 2018, that "my objective is not to make war in space", but to "protect ourselves", it is legitimate to be worried. In September, 2018, President Emmanuel Macron announced his intention to define next year for France "a defence space strategy". A Ministry of the Armed Forces working group was expected to make proposals on the subject by November, 2018.

A first point is that the US Administration's decision to create a space force is a dangerous precedent and the lifting of a taboo, and calls into question the efforts of China and Russia in the ongoing negotiation on a treaty of prohibition of weapons in space.

A second point is the following. It is necessary that France does not follow the

path of US policy in terms of space armament, but instead on the initiative of advancing the draft treaty calling for the prohibition of weapons in space.

## 7 – Conclusion and perspectives

The NWBT will and is already of great value in denouncing nuclear weapons. The goal is to eradicate nuclear weapons. By describing the involvement of France in space programs with military connotations, this paper aims to help to establish a real debate on the need to preserve space in peace, thinking that the world can be better saved by promoting peace and disarmament in the periphery of our planet. Multiplying initiatives to denounce the militarization of space is a means and is also a question of winning the battle of opinion to oppose the French militarization programs of space, and through this, to advance the cause of space as a zone of peace, making France an example for other countries.

## References

- [1] Collectif du 21 Septembre, Comptes rendus 2018. <http://www.21septembre.org/category/comptes-rendus/> (in French, accessed October 31st, 2018).
- [2] P. Salzenstein, "Europe against US missile defence – a conference in London to give Barack Obama a strong signal," Europe against US Missile Defence, a European conference organised by Campaign for Nuclear Disarmament (CND), London, England, 31st January 2009 (2009). <http://mvtpaix25.free.fr/2009/Europe-against-US-missile-defence.pdf> (Accessed October 31st, 2018).
- [3] Weapons sales are on the rise — here are the top 10 countries exporting arms around the world <https://www.businessinsider.fr/us/top-countries-exporting-weapons-arms-sales-2018-3> (Accessed October 31st, 2018).
- [4] H. M. Kristensen, R. S. Norris, "Worldwide deployments of nuclear weapons, 2014," 70(5), 96-108 (2014). DOI: [10.1177/0096340214547619](https://doi.org/10.1177/0096340214547619)
- [5] H. M. Kristensen, R. S. Norris, "Status of World Nuclear Forces," Federation of American Scientists, 2016, <https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/> (2016). (Accessed October 31st, 2018).
- [6] S. Dolev, J. Fenton, H. Kristensen, G. Mello, Z. Mian, P. Podvig, M.V. Ramana, H. Zhang, "Assuring destruction forever: 2018 edition," Reaching Critical Will, a programme of the Women's International League for Peace and Freedom (2018) <http://www.reachingcriticalwill.org/images/documents/Publications/modernization/assuring-destruction-forever-2018.pdf> (Accessed October 31st, 2018).
- [7] A. Pannier, "The Anglo-French defence partnership after the "Brexit" vote: new incentives and new dilemmas," Global Affairs 2(5), 481-490 (2016). DOI: [10.1080/23340460.2017.1284566](https://doi.org/10.1080/23340460.2017.1284566)
- [8] B. Tertrais, "The last to disarm? The Future of France's Nuclear Weapons," The Nonproliferation Review 14(2), 251-273 (2007). DOI: [10.1080/10736700701379344](https://doi.org/10.1080/10736700701379344)
- [9] Penmarch. Tir de M51 : le Mouvement pour la Paix a manifesté, Ouest France, June 2016 <https://www.ouest-france.fr/bretagne/pont-labbe-29120/penmarch-tir-de-m51-le-mouvement-pour-la-paix-manifeste-4296616> (in French, accessed October 31st, 2018).
- [10] H.R.2262 - 114th Congress (2015-2016): U.S. Commercial Space Launch Competitiveness Act, congress.gov, 25 November 2015 <https://www.congress.gov/bill/114th-congress/house-bill/2262> (Accessed October 31st, 2018).
- [11] P. Salzenstein, "Libérer l'espace de l'activité militaire," Planète Paix 634, 9 (2018).

- [12] J. Paolini, "French military space policy and European cooperation," *Space Policy* 4(3), 201-210 (1988). DOI: [10.1016/0265-9646\(88\)90062-8](https://doi.org/10.1016/0265-9646(88)90062-8)
- [13] I. Oikonomou, "The European Defence Agency and EU military space policy: Whose space odyssey?," *Space Policy* 28(2), 102-109 (2012). DOI: [10.1016/j.spacepol.2012.02.008](https://doi.org/10.1016/j.spacepol.2012.02.008)
- [14] Arianespace Soyuz ST-A set for CSO-1 launch, December 17, 2018. <https://www.nasaspaceflight.com/2018/12/arianespace-soyuz-st-cso-1-launch/> (Accessed December 18th, 2018).
- [15] Les Français contre le nucléaire militaire, La Croix, 5 July 2018 <https://www.la-croix.com/France/Securite/Francais-contre-nucleaire-militaire-2018-07-04-1200952564> (in French, accessed October 31st, 2018).
- [16] T. Ruff, "Negotiating the UN treaty on the prohibition of nuclear weapons and the role of ICAN," *Global Change, Peace & Security* 30(2), 233-241 (2018). DOI: [10.1080/14781158.2018.1465908](https://doi.org/10.1080/14781158.2018.1465908)
- [17] Signature/ratification status of the Treaty on the Prohibition of Nuclear Weapons, 2018 <http://www.icanw.org/status-of-the-treaty-on-the-prohibition-of-nuclear-weapons/> (Accessed October 31st, 2018).
- [18] Motoko Mekata (2018) How Transnational Civil Society Realized the Ban Treaty: An Interview with Beatrice Fihn, *Journal for Peace and Nuclear Disarmament*, 1:1, 79-92, DOI: [10.1080/25751654.2018.1441583](https://doi.org/10.1080/25751654.2018.1441583)
- [19] Opérations dans le monde, effectifs, chars, avions... Quelle est la situation de l'armée française ? [https://www.francetvinfo.fr/france/14-juillet/infographies-operations-dans-le-monde-effectifs-chars-avions-quelle-est-la-situation-de-l-armee-francaise\\_2281865.html](https://www.francetvinfo.fr/france/14-juillet/infographies-operations-dans-le-monde-effectifs-chars-avions-quelle-est-la-situation-de-l-armee-francaise_2281865.html) (in French, accessed October 31st, 2018).
- [20] Armée : la présence des forces françaises à travers le monde, *Le Figaro*, 28 November 2016 <http://www.lefigaro.fr/international/2016/10/28/01003-20161028ARTFIG00185-armee-la-presence-des-forces-francaises-a-travers-le-monde.php> (in French, accessed October 31st, 2018).
- [21] Carte des opérations et missions militaires, Ministère des Armées, 14 May 2018 [https://www.defense.gouv.fr/operations/rubriques\\_complementaires/carte-des-operations-et-missions-militaires](https://www.defense.gouv.fr/operations/rubriques_complementaires/carte-des-operations-et-missions-militaires) (in French, accessed October 31st, 2018).
- [22] "The militarization and weaponization of space: Towards a European space deterrent," *Space Policy*, 24(2), 61-66 (2008). DOI: [10.1016/j.spacepol.2008.02.001](https://doi.org/10.1016/j.spacepol.2008.02.001)
- [23] Militarization and Weaponization of Outer Space, January 2007 <http://www.globalissues.org/article/69/militarization-and-weaponization-of-outer-space> (Accessed 27<sup>th</sup> August 2018).
- [24] Militarisation of space, [https://en.wikipedia.org/wiki/Militarisation\\_of\\_space](https://en.wikipedia.org/wiki/Militarisation_of_space) (Accessed October 31st, 2018).
- [25] Allan Rosas (1983) The Militarization of Space and International Law, *Journal of Peace Research*, 20:4, 357-364, DOI: [10.1177/002234338302000406](https://doi.org/10.1177/002234338302000406)
- [26] D. Stephens (2017) Increasing Militarization of Space and Normative Responses," *Recent Developments in Space Law*. Springer, Singapore, DOI: [10.1007/978-981-10-4926-2\\_7](https://doi.org/10.1007/978-981-10-4926-2_7)
- [27] Francis Grimal, Jae Sundaram (2018) The Incremental Militarization of Outer Space: A Threshold Analysis, *Chinese Journal of International Law*, 17:1, 45-72, DOI: [10.1093/chinesejil/jmy006](https://doi.org/10.1093/chinesejil/jmy006)
- [28] Ils ont marché pour la paix à Besançon, *France Bleu*, May 2015 <https://www.francebleu.fr/infos/economie-social/ils-ont-marche-pour-la-paix-besancon-1431195562> (in French, accessed October 31st, 2018)

[29] Rennes. Le Mouvement de la Paix alerte sur le nucléaire, Ouest France, August 2017 <https://www.ouest-france.fr/bretagne/rennes-35000/rennes-le-mouvement-de-la-paix-alerte-sur-le-nucleaire-5180012> (in French, accessed October 31st, 2018).

[30] Rassemblement contre un nouveau tir de missile M51, France 3, June 2016 <https://france3-regions.francetvinfo.fr/bretagne/finistere/penmarc-h-29-rassemblement-contre-un-nouveau-tir-de-missile-m51-1021727.html> (in French, accessed October 31st, 2018).

[31] 200 manifestants dans les rues pour la paix à Besançon, Macommune.info, September 2017 <http://www.macommune.info/article/200-manifestants-dans-les-rues-pour-la-paix-a-besancon-168452/> (in French, accessed October 31st, 2018).

[32] Mouvement de la Paix: les pacifistes en ordre de bataille, L'Humanité, November 2017 <https://www.humanite.fr/mouvement-de-la-paix-les-pacifistes-en-ordre-de-bataille-645113> (in French, accessed October 31st, 2018).

[33] Concarneau. Un ancien général contre le nucléaire, Ouest France, April 2018 <https://www.ouest-france.fr/bretagne/concarneau-29900/concarneau-un-ancien-general-contre-le-nucleaire-5729154> (in French, accessed October 31st, 2018).

[34] Penmarc'h. Un tir de missile la semaine prochaine, Le Telegramme, April 2018 <https://www.letelegramme.fr/finistere/penmarc-h/penmarc-h-un-tir-de-missile-la-semaine-prochaine-06-04-2018-11916901.php> (in French, accessed October 31st, 2018).

[35] Antinucléaires: Stop les va-t'en guerre !, Le Télégramme, June 2018 <https://www.letelegramme.fr/finistere/quimper/antinucleaires-stop-les-va-t-en-guerre-16-06-2018-11996609.php> (in French, accessed October 31st, 2018).

[36] Une soirée cinéma contre les armes nucléaires, La Dépêche, June 2018

<https://www.ladepeche.fr/article/2018/06/15/2818350-une-soiree-cinema-contre-les-armes-nucleaires.html> (in French, accessed October 31st, 2018).

[37] Un plaidoyer pour une culture de paix La presqu'île parée pour la fête de la Saint-Pierre, Var Matin, July 2018 <http://www.varmatin.com/vie-locale/un-plaidoyer-pour-une-culture-de-paix-la-presqu-ile-paree-pour-la-fete-de-la-saint-pierre-242620> (in French, accessed October 31st, 2018).

[38] La France se prépare à mener la guerre dans l'espace, Les Echos, September 10th, 2018. <https://www.lesechos.fr/industrie-services/air-defense/0302224064372-la-france-devoile-les-axes-de-sa-strategie-spatiale-militaire-2203374.php> (Accessed October 31st, 2018).