



# DUTY OF VIGILANCE

## 2018 REPORT

This document falls within the framework set by Articles L. 225-102-4 and L. 225-102-5 of the French Commercial Code resulting from law no. 2017-399 of March 27, 2017 relating to the duty of vigilance for parent companies and contracting companies.

The Group, of which ArianeGroup Holding is the top holding entity, meets the criteria defined by law for the establishment of a vigilance plan. In this regard, together with its subsidiaries, ArianeGroup Holding has initiated actions designed to identify risks and prevent serious impacts on human rights, fundamental freedoms, health, safety and the environment

resulting from the Group’s activity, including relations with subcontractors and suppliers, with a view to establishing a vigilance plan.

This report reflects the Group’s policy on matters covered by the law of March 27, 2017, the actions carried out during the 2018 financial year and scheduled objectives for the future. It forms an integral part of ArianeGroup Holding’s management report for the year ending on December 31, 2018. After submission to the Company’s Board of Directors, this report is published on the Group’s website.

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# 1. ACTIVITY

## 1.1. GENERAL PRESENTATION

ArianeGroup's<sup>1</sup> activities and those of its Subsidiaries are summarized in the Appendix. The Group has a total headcount of more than 9,000 employees, mainly based in France and Germany.

ArianeGroup is lead contractor for Europe's Ariane launchers, as well as for the missiles of the French oceanic deterrent force. Its activities cover the entire life-cycle of a space launcher, from design to development, production, operation and marketing, through its subsidiary Arianespace. ArianeGroup produces and operates the Ariane 5 launcher and develops the future Ariane 6 launcher, for which it is the design authority. ArianeGroup and its Subsidiaries design innovative, highly competitive solutions for civil and military launch systems and space applications for their institutional, commercial and industrial customers. The Group is thus expert in the most cutting-edge technologies, from all aspects of complete propulsion systems right down to the items of equipment and materials.



*Ariane 5 is the epitome of European space expertise.*

The space industry is a highly strategic and technical sector serving demanding customers. To satisfy them, ArianeGroup applies a process of continuous improvement focused on innovation. Quality is a state of mind rooted in the company culture. This drives ArianeGroup to constantly re-assess its processes in order to continually improve its products and methods, and thus boost both efficiency and simplicity. The quality level of its products is one of the keys to ArianeGroup's long-term competitiveness. Obtaining ISO 9001, EN 9100, AQAP2110 and

<sup>1</sup> For capitalized terms used in this report refer to the Glossary on page 8.

ISO/TS 16949 certifications illustrates ArianeGroup's commitment to quality and its quest for excellence.

Against this background, ensuring end-to-end quality throughout the supply chain is an imperative intrinsic to the safety and reliability of space systems and applications. For ArianeGroup, the contribution of its partners and suppliers is an essential factor in the collective success of the space industry: their selection is based not only on their technical competence but also on the espousal of the fundamental values of the company set out in the Ethics Charter that they also adopt.

## 1.2. BUSINESS AREAS

ArianeGroup's business consists of three main areas:

### 1.2.1. SPACE LAUNCH

**Ariane 5:** lead contractor for Ariane 5 launchers, ArianeGroup coordinates more than 550 European companies working on the launch vehicle, including more than 100 SMEs. ArianeGroup supervises the entire industrial supply chain, from managing developments in the launcher's performance characteristics to their final adjustment by supplying the mission's flight software, and controlling its production. This includes the equipment and structures, manufacturing the engines, and the integration of the different stages and of the launcher in French Guiana.

**Ariane 6:** a European Space Agency (ESA) program, Ariane 6 is a family of launchers designed to offer maximum flexibility for customers on the institutional and commercial markets, by its capability to place any type of payload into an optimized orbit, whatever the mission. With its very large under-fairing volume, Ariane 6 ensures both conventional launches, for single or dual payloads, and complex missions corresponding to the new market needs, such as the orbiting of electrically-powered satellites or the multiple launch of satellite constellations, thanks to its upper stage equipped with the re-ignitable Vinci® engine. The launcher comes in two versions, depending on the mission (A64 or A62). The industrial organization set up to produce Ariane 6 is designed for maximum efficiency over the entire production cycle, through to delivery on the launch zone where, for greater flexibility, the payload is assembled on the launcher. The creation of clusters of excellence at the European level makes it possible to work with industrial partners in the spirit of an extended enterprise, in order to standardize methods and tools at the launcher level. The introduction of new industrial processes and innovative manufacturing technologies (3D printing, friction stir

welding, laser surface treatment, etc.), combined with a state-of-the-art Product Lifecycle Management system, help optimize mass production.

The Arianespace subsidiary guarantees access to launch services and solutions to all orbits, for institutional and commercial satellites. These satellites are used for all types of space applications, such as telecommunications, navigation, science, Earth observation, technological demonstrations, etc. Arianespace offers three high-performance space transportation solutions, according to the needs of its customers: the Ariane 5 heavy-lift launcher, the Soyuz medium-lift launcher and the Vega light-lift launcher.

### 1.2.2. DEFENSE

Prime contractor for the M51 program for the French Directorate General of Armaments (DGA) on behalf of the French Navy's Strategic Oceanic Force (FOST), ArianeGroup brings together the expertise of more than 900 French industrial companies with a dual objective: a constant quest for the highest level of performance, and national independence.



*The M51 missile is a crucial element in the French sea-going nuclear deterrent force.*

© ArianeGroup SAS

Its responsibility includes upstream research, the design, development and production of missiles, their ground-based implementation systems and the control and command systems on-board submarines.

ArianeGroup also ensures the Through Life Support (TLS) of the systems and dismantling at the end of their service lives.

### 1.2.3. EQUIPMENT AND SERVICES

**Equipment for satellites and space vehicles:** a specialist in pyrotechnics for launchers and satellites, and a specialist in space instrumentation and optical, optronic and neutronic equipment for civil and military applications, the Group is also the European leader in igniters for spacecraft engines.

It complements its offering with a range of products for scientific, Earth observation and telecommunications satellites (compact antennas, antenna reflectors, etc.).



*Ultra-light satellite antenna reflector.*

© ArianeGroup/Hervé Goussé – Master Films

**Launcher and orbital propulsion:** the Group masters all the requisite skills, from the development to the manufacturing of launch systems using liquid or solid propulsion systems.

Whether the mission requires liquid propulsion, provided by the Vulcain®2, Vinci® or HM7B engines, or solid propulsion, provided by the MPS and P120 engines, ArianeGroup's vocation as an engine manufacturer is backed by 50 years of expertise.

With regard to chemical or electrical propulsion systems for satellites or space systems, the Group has a complete range of systems, subsystems and products capable of providing propulsion solutions for all types of missions, of any size, including manned flights.

The Group's skills and products meet the needs of many international customers in the launcher or satellite sectors.

**Security and defense:** with its experience as prime contractor for large and complex programs, ArianeGroup offers studies and turnkey supplies for complex infrastructures, from assembly, integration and satellite testing centers, to space monitoring centers, launch pads, or infrastructures for the research, production, storage, destruction or dismantling of dangerous products.

ArianeGroup also provides solutions for space surveillance and security, anti-missile defense systems, and performance analyses of existing systems or those under development.

## 2. METHODOLOGY

### 2.1. CROSS-DEPARTMENTAL COMMITTEE

Under the auspices of the General Secretary, a member of the Executive Committee of ArianeGroup, this report has been prepared by a cross-departmental committee (the “Committee”) involving the functions<sup>2</sup> which, within the Group, deal with topics related to corporate social responsibility, risk management and internal control.

In order to account for the vigilance measures implemented, the Committee first identified the procedures relating to: risk analysis, assessment of sites, Subsidiaries, suppliers and subcontractors, risk mitigation and other measures to prevent serious impacts, and existing monitoring mechanisms both within ArianeGroup and within its Subsidiaries.

The Committee drew on the analyses of the Corporate Social Responsibility (CSR) working group and on the action plans implemented under the Group’s CSR policy. This CSR policy has been established in conjunction with stakeholders (employees, shareholders, customers, suppliers, space agencies, sectoral organizations, stakeholders from civil society and academia, etc.) and as part of multi-stakeholder initiatives within the aerospace industry: the GIFAS (*Groupement des Industries Françaises Aéronautiques et Spatiales*) working group on duty of vigilance, the CNES working group on circular economy, and participation in the workshop to redefine ESA’s CSR policy.

### 2.2. RISK MAPPING

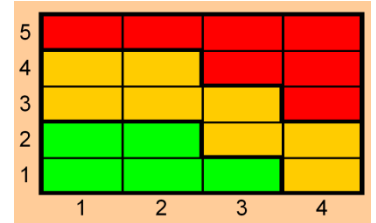
ArianeGroup has processes in place to identify and prioritize the risks related to its activities.

ArianeGroup establishes a **comprehensive risk map** covering the Group’s activities. The Enterprise Risk Management (ERM) & Internal Control department within the Finance Department is responsible for supervising risk management and mapping. The methodology for identifying, assessing and prioritizing risks is defined in a procedure applicable at Group level. Each identified risk is prioritized according to its probability of occurrence and its impact with respect to the Group’s personnel, sales, finance, reputation and know-how. Once the

<sup>2</sup> The following functions are represented in particular: Ethics & Compliance, Finance, Sites, Health, Safety and Environment (HSE), Legal, Human Resources, Procurement, Communication and Audit.

criticality of each risk has been assessed, actions to reduce its probability and/or impact are defined. That mapping and the risk reduction strategy are presented twice a year to the ArianeGroup Executive Committee. The risks relating to the Group’s activities, the state of progress in actions and the effectiveness of those undertaken are re-assessed during the meeting.

The tools and methodology for comprehensive risk mapping take into account the **areas covered by the duty of vigilance**: an excerpt from this mapping has been



produced to focus on the societal and environmental risks associated with duty of vigilance that the Group’s activities could cause to third parties and to the environment. This excerpt focuses on the following risk families: HSE, Human Resources and Purchasing.

It shows that the main risks identified in 2018 for stakeholders and the environment are those related to health and safety, in particular industrial and personnel risks, as well as the risks of accidental pollution. A specific analysis of the risks related to human rights and fundamental freedoms will be conducted during the Group’s risk assessment campaign in 2019.

**Subsidiaries** apply ArianeGroup’s methodology adapted, where appropriate, to the size and specific features of the activity of each Subsidiary.

ArianeGroup ensures that this methodology is applied by the Subsidiaries by conducting a risk review twice a year and an annual internal control test campaign. At the end of the risk review and internal control campaign, each Subsidiary issues a “letter of affirmation” in which it commits to implementing and properly applying company risk management and internal control processes.

The Subsidiaries report their major risks and the associated action plan (risk mitigation, prevention of serious impacts) for analysis and consolidation in the Group’s risk mapping.

In addition, a methodology for mapping the risks inherent to the activities of **subcontractors and suppliers** is being developed by the Purchasing and Ethics & Compliance departments, following a process designed to associate a level of risk to the activities of subcontractors and suppliers, taking into account the following parameters: the supplier’s industrial sector, their geographical location, and the family of purchases. This will allow for the

implementation of measures to prevent the risks and serious impacts on human rights and fundamental freedoms, as well as those affecting the health and safety of people and the environment. The map will be updated at least once a year.

### 2.3. INTERNAL CONTROL TOOLS

Among the internal control tools, the Group has set up an independent internal audit function to carry out audit and advisory work on behalf of the Executive Committee and the ArianeGroup Holding Committee in charge of Audit, Risk, Finance and Compliance (ARFCC).

Audits may be requested by the members of the ArianeGroup Executive Committee or by the ARFCC as part of the Group audit plan or to respond to a specific request.

Against this background, the internal audit provides written reports based on objective and independent analyses and ensures the implementation of the corrective action plans.

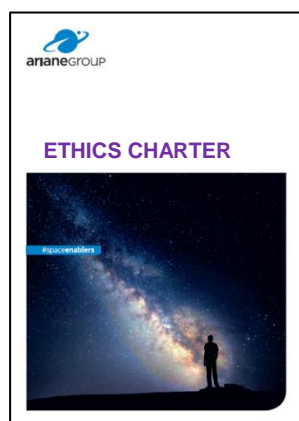
## 3. ACTIONS

The Group's duty of vigilance approach and the resulting measures are constantly being deployed and adapted.

During the 2018 financial year, ArianeGroup reinforced the action plan initiated and supervised on a daily basis in the following main areas.

### 3.1. ETHICS CHARTER

ArianeGroup adheres to the fundamental conventions of the International Labor Organization (ILO), the guiding principles of the Organisation for Economic Co-operation and Development (OECD) for Multinational Enterprises and the United Nations' Universal Declaration of Human Rights.



These principles are reflected in the ArianeGroup **Ethics Charter** which defines the ethical principles and the essential values applicable within the Group.

Following the publication of the law on the duty of vigilance, the Ethics Charter was updated in 2018 to

clarify the sections dealing in particular with human rights, HSE, escalating alerts, eco-efficiency and responsible sourcing, including ArianeGroup's duty of vigilance on its supply chain.

### 3.2. RESPONSIBLE PURCHASING

The principles described in the ArianeGroup Ethics Charter are included in the **Supplier Ethics Charter** applicable to the contractual relations between ArianeGroup, its subcontractors and suppliers.

Following the publication of the law on duty of vigilance, ArianeGroup also updated its Supplier Ethics Charter to clarify the sections dealing in particular with human rights, HSE, escalating alerts, eco-efficiency and responsible sourcing, including the duty of vigilance in the supply chain.



The Supplier Ethics Charter, supplemented by the specific requirements relating to the environment, is referenced in the General Purchasing Conditions (GPC) and in the contracts or purchase orders placed by ArianeGroup with its subcontractors and suppliers.

The commitment of ArianeGroup's subcontractors and suppliers to respect the principles contained in the Ethics Charter and to cascade them in their own supply chain is an integral part of ArianeGroup's Responsible Purchasing action plan. This plan is designed in particular to promote and enforce good practices relating to human rights, ethics, health, safety and the environment.

The deployment of this action plan is accompanied by awareness-raising sessions on sustainable development for employees of the Procurement department (60% of them were given awareness training in 2018). New sessions will be organized periodically from 2019 onwards.

### 3.3. HEALTH, SAFETY AND ENVIRONMENT (HSE) POLICY

The HSE Policy formalizes ArianeGroup's commitment to respecting laws and regulations, protecting human life, respecting the environment, preventing pollution and safeguarding property.

In 2018, ArianeGroup's efforts in this area focused on the following priorities.

### 3.3.1. HSE PERFORMANCE SYSTEM

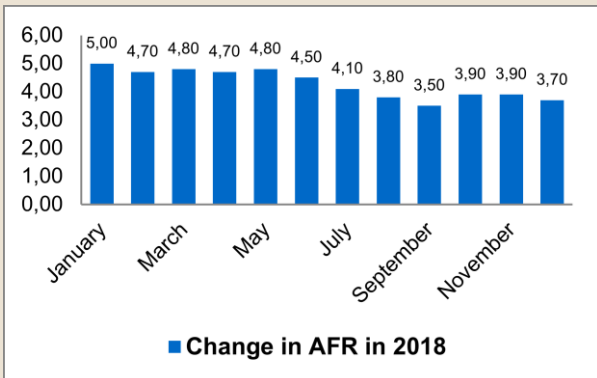
The HSE Performance System is one of the components of ArianeGroup's overall management system that contributes to managing HSE risks inherent to its business.

The main objectives are to ensure health and safety in the workplace, to manage technological risks and their environmental impact, to control energy consumption and to set up an HSE performance optimization program.

#### ACCIDENT FREQUENCY RATE

The HSE Performance System helped reduce the **Accident Frequency Rate (AFR)\*** from 5 to 3.7 in 2018, which amounts to a decrease of 19.5%.

In gross figures, there was a decrease of 11 accidents with lost time, representing 672 days off.



For the year 2018, the audits carried out as part of the HSE Performance System made it possible to assess the overall performance of ArianeGroup's sites in France. The target for the first three years (2018-2021) focuses on the consolidation of basic standards.

In 2019, audits will be carried out on ArianeGroup's sites in Germany.

(\* AFR = Number of accidents with lost time of more than one day occurring during a period of 12 months divided by one million working hours.

The implementation of the performance system at ArianeGroup site level includes establishment of the organizational structure, definition of roles and responsibilities, application of procedures, review and upkeep of the HSE policy and continuous improvement of HSE performance.

In 2018, the ArianeGroup HSE Performance System achieved ISO 14001 equivalence.

### 3.3.2. HSE TRAINING

Personnel health and safety were priorities in the 2018 internal training plan. These priorities will be continued in 2019.

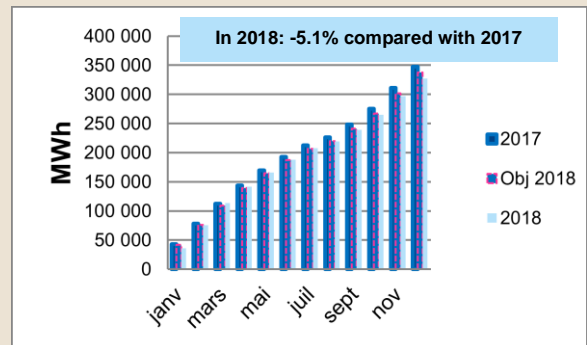


In 2018, 32,360 hours of HSE training were delivered and 2,174 people trained.

### 3.4. ENERGY POLICY

#### ENERGY CONSUMPTION

To achieve the ambition set out in the Energy Policy (-10% by 2020), the aim was to reduce the **energy consumption** of ArianeGroup by 3% in 2018. **Savings of 5.1%** have been achieved compared with 2017.



Megawatts consumed (gas, electricity, biomass): in line with the ArianeGroup target in 2018

In order to minimize its environmental impact, ArianeGroup has adopted an Energy Policy which has five major priorities:

- implementation of the energy performance system – an integral part of the HSE system,

- consideration of energy efficiency when establishing site and production master plans,
- integration of energy performance as one of the decision-making elements in the design and construction of site infrastructures, production and testing facilities and IT resources,
- management of facilities to ensure the lowest possible consumption of energy required for site production and operation,
- the responsible purchasing of electrical energy including a share of green energy from renewable sources.

The objectives defined by this policy for 2020, compared with the reference year of 2017, are:

- a 10% decrease in energy consumption,
- doubling the production of renewable energy,
- a 15% reduction in greenhouse gas emissions.

### 3.5. ECO-DESIGN

A Design for Environment (DfE) team is dedicated to the study of environmental impacts of the products and processes developed by ArianeGroup as well as the methodological development of activity sector-specific indicators.

The goal of the DfE team is to promote an overall vision of the product and process life-cycle by taking terrestrial and orbital ecosystems into account and to guide design choices to reduce their environmental footprint.



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In 2018, ArianeGroup's efforts in this area focused on:

- the Life Cycle Assessment (LCA) for operations of the future Ariane 6 launcher,
- the extension of the Environmental Quality Index into the new ArianeGroup tools and scope in order to take into account product toxicity from the design phase,

- the application in house and with suppliers as well as the response to the environmental requirements (regulatory and contractual) of military programs,
- communication about the work carried out within the framework of a CIFRE (*Convention Industrielle de Formation par la Recherche*) thesis on the creation of a Space Debris indicator compatible with the normative LCA framework.

Finally, ArianeGroup is involved in sectoral initiatives related to eco-design: the GIFAS working group on eco-design, the CNES conferences on space debris, ESA Clean Space Industrial Days, etc.

### 3.6. HUMAN RESOURCES



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ArianeGroup has transposed into the internal regulations of its sites and collective agreements the main principles enshrined in the Universal Declaration of Human Rights, including diversity and equal opportunities; occupational safety and health; and the right to rest and to paid leave.

#### 3.6.1. COMBATING DISCRIMINATION

ArianeGroup is implementing measures to combat discrimination, in particular with regard to recruitment, employment and access to vocational training, and is developing supervisory tools for that purpose.

For example, ArianeGroup SAS's overall score for 2018, based on the gender equality index defined by the French law of September 5, 2018, was 89/100.

#### 3.6.2. COMBATING SITUATIONS OF MORAL AND SEXUAL HARASSMENT, SEXIST CONDUCT AND WORKPLACE VIOLENCE

ArianeGroup respects and enforces respect for the dignity and privacy of every employee, and does not tolerate any form of harassment in the workplace, of

any kind, or any form of sexist conduct or workplace violence.

ArianeGroup strives to take all the measures required to prevent and deal with acts of moral or sexual harassment, sexist conduct and workplace violence.

### 3.6.3. PSYCHOSOCIAL RISKS

ArianeGroup pays particular attention to the prevention of psychosocial risks and stress at work.

In 2018, ArianeGroup's efforts in this area focused on the following:

For ArianeGroup SAS:

- the continuation of preventive actions as part of the reorganization within the company,
- the deployment of awareness-raising actions on the prevention of psychosocial risks, particularly for managers and Human Resources personnel,
- the implementation of psychological assistance by telephone (toll free number).

For ArianeGroup GmbH: the deployment of psychosocial risk assessment questionnaires within clusters in order to organize specific workshops where appropriate.

## 3.7. PROTECTION OF PRIVACY AND PERSONAL DATA

ArianeGroup respects and protects the privacy of individuals and the rights of its employees, customers, suppliers and third parties.

In 2018, the Group's efforts in this area focused on the following:

- mapping of the processing used to maintain the registers of ArianeGroup and its Subsidiaries,
- identification of projects subject to the Privacy Impact Assessment,
- support of Purchasing for supplier compliance.

## 3.8. FUTURE DIGITAL PLATFORM FOR THE COLLECTION AND PROCESSING OF REPORTS

In its day-to-day activities and through its working methods, ArianeGroup encourages transparency, trust and respect, in order to develop a culture of dialogue essential to the escalation of alerts. ArianeGroup condemns and undertakes to fight against any form of retaliation with respect to whistle-

blowers in accordance with the commitments made in its Ethics Charter.

Full-time and interim employees are invited to report any situation or behavior contrary to the principles of the Ethics Charter through their usual contacts such as their line manager or a representative of the Human Resources, Ethics & Compliance or Legal departments, who must in return provide them with adequate support so that the report is processed as soon as possible.

In addition, and in accordance with the legal requirements (Sapin II and Duty of Vigilance French laws), the Ethics & Compliance department is preparing the implementation of a digital platform for the collection and processing of reports, open to employees and third parties, to guarantee the strict confidentiality of people and the associated exchanges of information.

## GLOSSARY

*The terms and acronyms used in capital letters in this report have the meaning as defined below:*

**ArianeGroup:** refers to ArianeGroup Holding (top holding entity) and its first-level Subsidiaries ArianeGroup SAS and ArianeGroup GmbH

**Group:** refers to ArianeGroup Holding and its direct or indirect Subsidiaries

**Executive Committee:** refers to the ArianeGroup Management Committee

**Board of Directors:** refers to the Board of Directors of ArianeGroup Holding

**Subsidiaries:** refers to the companies controlled within the meaning of II of Article L. 233-16 of the French Commercial Code listed in Appendix 2.



## APPENDIX – GROUP BUSINESS

