

**PRELIMINARY PROJECT**

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**“PROPOSAL FOR PREVENTIVE MEASURES AND  
DEVELOPMENT OF PROTOCOLS FOR SANITARY  
BIO-SECURITY”**

*Traffic of Passengers CHILE – ANTARCTICA*

***DAP AIRLINES***

April 2020

## **BACKGROUND INFORMATION**

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The present document represents a preliminary Project, elaborated by health professionals, with experience in the participation, implementation and direction of sanitary projects, with motivation and interest in the areas of Public Health, Occupational Health and Innovation in Health.

## SUMMARY

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## 1. CONTEXT

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The current pandemic of the respiratory virus SARS-CoV-2, which triggers into the COVID-19 disease, has created havoc in every area, severely shaking the markets and economy at every level.

In order to reactivate the tourism in Chile and towards Antarctica, the first condition is to guarantee that the destination and the different means of transport, facilities and infrastructures, along the itinerary, are *safe and covid-free*, therefore it is fundamental to offer common criteria aiming to provide security and confidence to the passengers, the population and the parties involved (by undertaking a collaborative effort between all the institutions and companies, public and private, directly related with this activity).

For this new beginning, has been determined at a world level, a transition in the area of tourism and transport of passengers, through three fundamental aspects: ***new and highly demanding hygiene measures, use of technology for health control of passengers and employees and less overcrowding.***

It is a fact that this sector will be in need of coronavirus *prevention and control actions*, with the possibility of performance of quick and massive tests that would allow managing the flow of passengers, transportation and accommodation means, with safety. Furthermore, safety measures for employees and passengers: from guidelines to ensure social distancing, disinfection of spaces, contact-free temperature control, personal protection equipment, to radical changes in the logistics of food service, prioritizing room delivery and certified and exclusive suppliers.

It will be essential to decrease social contact ("*contactless*"), incorporating to the maximum the use of all technology available to the companies, limiting the interaction between passengers and employees in the most efficient and subtle way possible.

Only this new capacity of transporting passengers with highly efficient logistics and a high sanitary standard, will grant the seal of quality and leadership in bio-security that the Antarctic passenger has begun to demand.

## 2. OBJECTIVE, DEFINITION AND SCOPE

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The objective of the “**Post SARS-CoV2 Sanitary Safety**” Protocol, is to make the experience of the travel to Antarctica, *safe and free of transmittable diseases*, especially SARS-CoV-2 (new coronavirus, identified as the cause of the COVID-19 disease), currently a pandemic, protecting this way all the passengers (who enter the country or are currently in Chile), first line employees and the rest of the trip entourage, whose destination is the white continent.

Essentially, to continue providing a high end travel experience, but incorporating the ***seal of certified sanitary safety, informed and evident***, from the moment when the passenger becomes part of the trip entourage, until the end of his/her experience.

The same way, the rigorous implementation of a series of rules of the present protocol, will allow *detecting any sanitary risk situation* that would arise during the development of the trip and the *timely detection of any suspicious symptom of the transmittable disease* that may occur during the transportation, until the end of the itinerary, acting in a prompt and efficient manner, in order to continue providing health safety to the rest of the crew and passengers, and simultaneously the best and timely clinical assistance possible to the affected party (referral to private assistance centers, performing emergency evacuations through the sanitary corridor).

### **3. TARGET POPULATION**

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The target population of the present protocol is every person who enters into Chile, or is within its geographical limits and wishes to perform the travel itinerary to Antarctica (whether of Chilean or foreign nationality). Thus, there will be considered as “passenger”, every person who voluntarily makes the trip, notwithstanding the final objective of the same (tourism, scientific expedition, political diplomacy, business, or other).

## 4. ABOUT THE MANAGEMENT AND EXECUTION TEAM

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### 4.1 Management Team:

There has been designated a *local, management* team, who will implement the protocol, organize the logistics necessary to address its critical points and supervise its development and compliance, by each of the health professionals on site (a health team that will be an integral part of the trip), who must apply the new regulations and interact with the passengers.

This team will be permanently integrated by a *Sanitary Safety Coordinator* and *medical professional* (consultant). The safety coordinator will be of preference an infirmity professional. There will also be considered temporary professional consultants, such as a biotechnology engineer, a health official or epidemiologist and a risk prevention engineer.

In order to carry out the implementation and execution of the present protocol, this local management team, nurse – medic, will be an integral part of the work developed by the tourism company in Punta Arenas.

The existence of the *Sanitary Safety Coordinator* will be essential, since he will be the one to set the roles and responsibilities in the health context, of all those who come into direct contact with the passengers.

The team that will carry out the protocol on site, will be defined further on (first line staff, direct contact with passengers).

#### **Regarding the functions and role of the Sanitary Health Coordinator:**

- Implementation and Supervision of all the processes involved in the present document, and with special care its critical points.
- Coordination of the response in case of any health risk situation.

- Anticipation of any emergency situation that would put in risk the integrity and wellbeing of the clients and collaborators, requiring immediate action.
- Within his responsibilities will be the correct supply of personal protection elements, according to the global, national and regional sanitary context, for all the first line employees and passengers.
- Coordination of the entire emergency evacuation, in collaboration with the on-site health team and the health teams based in Punta Arenas (public and private health facilities).
- Observation of the profile of each passenger, identifying situations/factors of individual risk, which could potentially have a negative impact on the rest of the group, such as elderly passengers, those with recent health interventions (hospitalization, surgery, chronic pathologies and those under pharmacological treatment, among others).
- Supervision of the compliance with the Cleaning and Disinfection Program (Appendix 4) detailed in the present document and transversal to the enforcement of the protocol.
- Under his responsibility will be the Communications and Information Flow Policy (Appendix 6), included in the present protocol and transversal to its enforcement (he will be the authorized and validated spokesman on this matter).
- He must ensure, through methods that will be detailed further on (Educational Program, Appendix 3), a high educational level in health (continuous education) of the entire work team, emphasizing on those who are in direct contact with the passengers.
- He will also plan the constant education and diffusion of all the activities developed by the Health Team for the sanitary safety of the passengers (brief indications and informative talks, such as for example, the correct use of the face mask, as well as implicit planned diffusion on brochures or videos, which would inspire safety and tranquility and most of all generate a solid perception of confidence, given all the measures adopted and visibly executed by the company).

For more detail, check Appendix 5 **“Functions of the Management and Execution Team”**.

#### **4.2 Execution Team:**

There has been established an on-site Health Team, who will materialize the measures of the present protocol and use the guidelines set for the optimal safeguard and maintenance of the bio-security of the passengers. This team of professionals will be initially formed by two persons:

- ***Medical Professional.***
- ***Infirmary Professional.***

The number of health team members will vary, always in proportion with the volume of passengers in each trip entourage. There can also be included a TENS if necessary, however this will depend on the number and characteristics of the group of passengers.

**Regarding the functions and role of the medical professional on site, the following are considered priority:**

- He will lead the Health Team on site, guiding the sanitary actions with medical indications, supervising its correct development and fulfillment.
- He will ensure the best care for the patient, performing, when required, all the actions of his responsibility and working in collaboration with the infirmary professional.
- He will work in collaboration with his team partner, aiming for the high satisfaction of the Antarctic passenger.
- He will be responsible of the full compliance with all the actions regulated by the present document.
- He will lead and perform all the usual health assistance actions, as well as those unforeseen, rescues and emergency evacuations.
- He will work in collaboration with the health teams located in the different Antarctic bases and others, if necessary.

- He will perform actively in all the positions under his responsibility (educational area, administration area, clinical assistance area, among others, during the entire itinerary of the trip).

**Regarding the functions and role of the infirmary professional on site, the following are considered priority:**

- He will coordinate the health assistance required for each of the passengers.
- He will ensure the best care for the patient, performing, when required, all the actions of his responsibility and working in collaboration with the infirmary professional.
- He will work in collaboration with his team partner, aiming for the high satisfaction of the Antarctic passenger.
- He will be responsible of the full compliance with all the actions regulated by the present document.
- He will lead and perform all the usual health assistance actions, as well as those unforeseen, rescues and emergency evacuations.
- He will work in collaboration with the health teams located in the different Antarctic bases, the Management Team in Punta Arenas and others, if required.
- He will perform actively in all the positions under his responsibility (educational area, administration area, clinical assistance area, among others, during the entire itinerary of the trip).
- He will work in a collaborative way, applying all the indications given by the Medical Professional, for the best clinical care of the passengers.

## 5. DEFINITION AND DESCRIPTION OF THE ACTIVITIES TO BE PERFORMED

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By means of the present document is intended to undertake **4 main activities**, through **three lines of action**, to which the passenger will voluntarily submit, in order to ensure that way his complete and total sanitary bio-security, guarding his own health and the health of the rest of the group of passengers and employees, part of the trip entourage.

The **3 lines of action** will be focused on:

- **Passenger.**
- **Passenger - Employee.**
- **Environment.**

Through these lines of action, are defined 4 main activities:

1. **Health Certification of the Passenger (Bio-Security Passport).**
2. **Surveillance of compliance of the Personal Hygiene Measures and Correct use of Personal Protection Equipment (PPE).**
3. **Insurance of a Sanitary Safety Perimeter.**
4. **Continuous Education in Health** (focused on the prevention measures for highly contagious, respiratory diseases).

Each of these activities consists of **tasks** or **services** (which will be detailed in the Action Plan, not included in the present document, since it is in its draft stage).

Lines of Action and its activities:



**6. DEFINITION OF THE ACTIVITIES**

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**6.1 PASSENGER'S HEALTH CERTIFICATE (*Bio-Security Passport*).**

The individual health certification of the passenger will apply to all the clients, with no exceptions (notwithstanding the performance of previous exams in their places of origin, the motive of the trip or the time of stay in the final destination). Besides, these will be available with the same standard and quality, for all the employees part of the trip entourage who are in direct contact with the passengers, if the tourist operator requires it so.

Those potential clients who do not wish to be submitted to the individual health certification and the activities it involves, will not be able to integrate any group of travelers, given the *epidemiological* risk that it would represent (he will be informed of this in advance by his tour operator or travel agency).

According to the evolution of the current pandemic in the country, in the moment when the present protocol is implemented will be considered the suggestion of SERNATUR Chile and there will be demanded the performance of a prior quarantine by the passenger, that is, *from every client will be requested an obligatory prior standard quarantine for the COVID-19 disease, which must be certified through a sworn statement, proving that way the compliance with the mentioned measure.*

Likewise, and as a priority, will be requested tests (PCR, IgG, IgM), that the passenger must take 48 hours before his arrival to the country (these will be repeated once he enters and after his Health Certification).

The ***Passenger Health Certificate***, is defined as a health activity, composed of three parts (primary preventive care), contained in one same revision (one only instance during the entire trip), except in special cases or unforeseen events, or when the passenger's stay is more than 14 consecutive days. The objective is to perform a detailed, complete but quick health evaluation, that would allow providing certainty and complete safety of the current health conditions of each passenger. It is made up of:

- *Questionnaire (on a Tablet of medical use).*
- *Control of Vital Signs (digital, portable medical equipment).*
- *Medical Evaluation.*
- *Performance of the Test (ID NOW® COVID-19 Detection Test System, Abbott and others, any other high quality analysis equipment, necessary for the performance of the previously mentioned tests, PCR, IgM, IgG, prioritizing those that deliver quick results and that are portable).*
- *Granting of the Bio-Safety Passport (the result will be given verbally, the Passport physically, it may be a clinical record).*

*There will be a list of information that will be requested from the passenger, while planning his trip (medical certificates, treatments, vaccines, among others, in order to evaluate all the individual factors that may be a risk for the rest of the passengers and employees, for example: chronic users of narcotics, anticoagulants, among others). These documents will be part of the Passenger's Profile. The Health Team will be given this information in advance.*

It is important to mention that even though this activity will require the implementation of logistics and a complex execution organization, the passengers will barely perceive it and during their wait, before their evaluation, they will be able to enjoy the facilities and distractions planned for them.

Regarding the **Informed Consent** (Appendix 2), the passenger will be informed at the moment of booking his trip, that, within the new safety regulations of the company is required his understanding and consent, by means of signature of the digital document (a procedure performed before the trip), in order to continue with the execution of the Protocol. It is important for the client to receive complete information by means of a brochure or the informative video created for that purpose and to be informed in advance which will be the sanitary safety activities that will be developed during his trip and stay, for his own wellbeing and the wellbeing of the rest of the first line collaborators.

All the information gathered, *Passenger Profile* (information requested in advance of the trip), *Passenger Health Certificate* (information gathered at the commencement of the trip through this evaluation exercise), will finally be part of the **Bio-Security Passport**. The mentioned information will be entered to a digital system that would allow checking it online, both by the Health Team, as by the Safety Coordinator in Punta Arenas. A part of this information, can be followed up through a phone app, by each passenger on his personal device (this will include the daily health control).

This exercise will be performed by highly qualified professionals (medic and nurse), who will later integrate the group of passengers and remain during the entire itinerary (they will then be part of the trip *Health Team*), providing confidence and satisfaction to the clients and setting a direct and efficient line of communication, for any risk situation that may arise. The number of professionals integrating the Health Team will be proportional to the number of passengers.

This exercise will be performed under strict quality standards of health care, confidentiality and comfortability. There will be used the facilities of the airport to which the passengers will arrive, or a facility prepared for that purpose as close to the passenger's entry point to Chile (a hotel close to the airport), carrying out, at all times, the movement and flow of passengers always within the sanitary corridor, planned for that purpose with no possibility of interaction with third parties who are not part of the trip entourage.

The purpose is for each passenger to obtain his **Bio-Security Passport**, in order to continue with the itinerary planned. This document will be valid for the tour operator, for the Health Team and for the passenger himself, giving proof that he is in safe health conditions (not a source of contagion) and that he does not represent a risk for third parties (employees and other passengers).

As described, this instance will be unique and at the start of the itinerary, it will only be repeated if the trip lasts more than 14 consecutive days, there is a sudden change in the health of the passenger or a situation occurs (such as contact with a possible source of contagion, appearance of suspicious symptoms, among others).

Starting from the second day of the itinerary, there will only be carried out one basic health check, that will include:

1. **Control of Vital Signs** (using artificial intelligence, that is a NFC technology bracelet).
2. **Short Questionnaire** (performed through a phone app which the passenger shall answer through the same device).

The objective of the basic health control is to perform a follow up, without direct contact with the passenger, where also and very relevant, all the information will be on disposition on the web platform of the Bio-Security Passport, therefore, the Health Team must only check it and be aware of the alerts generated by the system, for this activity (at the same time, the client will be able to check the traceability of his data using the same phone app).

## **6.2 PROTECTION MEASURES AND USE OF PERSONAL PROTECTION ELEMENTS.**

One of the most important activities is the one that the Health Team will carry out regarding the Measures for Basic Protection and use of Personal Protection Elements (PPE), since those are the ones that will prevent and detect any source of infection and dissemination of the disease, within the passengers group or the employees. Therefore, the direct observation performed by the health professionals on site, during the trivial moments of the itinerary (*active guidance*), will be essential for the performance of the *supervision of compliance of measures, educational intervention and medical support*. The objective of this activity is to be carried out in a permanent, continuous and personalized way, during the entire trip, with the best discretion and subtlety towards the passenger and the employees. This will provide the traceability and consistency of the medical results obtained on a daily basis, granting confidence and peace to all those involved.

**Protection Measures:** are defined as those measures which, in this context, allow preventing a contagious respiratory disease, focused on the passenger and the employee. The supervision of the correct compliance considers the following measures:

- Correct washing of hands (in the cases where it can be observed, otherwise indirectly through educational instances).
- Correct use of alcohol gel (direct supervision).
- Respiratory hygiene measures (covering nose and mouth when coughing or sneezing and not touching eyes, nose and mouth).
- Keeping of physical distance (not less than 1,5 m.) between people.

- Avoid shaking or brushing coats, clothes and luggage, especially in common areas, with other passengers close by.
- Frequent disinfection of personal elements (that may act as fomites), such as cell phones and cameras (supervision of the correct use of “disinfection boxes” provided especially for this purpose).
- Avoid sharing personal use utensils.

**Use of Personal Protection Elements (PPE):** this considers the use of accessories that would allow preventing, through its correct use, contagious respiratory diseases. There will be considered only the use of:

- Facial mask.

Only in exceptional cases and by medical indication (for example: suspicion of contagion, transfer to a medical center, among others), will be considered the use of other protection elements (such as rubber gloves, disposable coveralls, facial shield, etc.).

### **6.3 SAFE SANITARY PERIMETER.**

This activity is defined as the action to implement and ensure a coronavirus – free environment (decreasing its transmission to the maximum). This will consider:

- Cleaning and Disinfection of Environment (passenger areas, evaluation room, air cruiser, rooms, among others, where, as reference, will be applied the Chilean Ministry of Health protocol: “Protocol for Cleaning and Disinfection of Environments Covid-19”, besides the procedures described in Appendix 4, prepared especially for these purposes).
- Cleaning and Disinfection of Luggage and Cargo (Appendix 4). There will be considered the use of a portable arch/tunnel for disinfection of objects (it can be installed on the arrivals/take offs along the itinerary).
- Cleaning and Disinfection of Passenger’s Personal items (this considers the complete outfit and shoes of the passenger). Appendix 4.

- Implementation of a high standard Ventilation System in the air cruiser, rooms and common use areas (using filters that would allow the recirculation of air keeping it constantly fresh, such as “HEPA” filters, High Efficiency Particulate Air).
- Certified Cleaning of Ventilation Filters.
- Use of Deferred Timetables in order of avoiding overcrowding in the common areas (for example: during the food service) and passenger flow processes (arrivals, transfers).
- Markings in all common areas, visible on the floor, showing the safe distance between people, (dining areas, waiting rooms, air cruise, among others).
- Safe use of areas or “hot points”, such as reception desks, public bathrooms, among others (especially during the permanence on airports and ports), this implies the constant surveillance of the travel group or entourage by the first line employees and health team. That is, a cohort closed group (nobody leaves the group or interacts with third parties not belonging to the closed group).
- Identification, analyzation and modification of all the interaction processes where the direct contact between the employee and the passenger can be reduced to the maximum (encouraging, whenever possible, through technology and innovation the “contactless”). Among those: room service, permanent “host” with the client group, the objective is to have minimal contact, without diminishing the degree of assistance corresponding to the category of the service hired.
- Exclusive food service, with one unique, certified, supplier, during the entire itinerary and especially during the transfers (there will only be used packed food provided by the Company).

Regarding a more extensive bio-security of the passengers’ perimeter and regarding the activities previously mentioned, there will be incorporated to the maximum the technology that would allow supporting the services committed, with an acceptable level of scientific support in the decrease of the transmission and control of the virus:

- Use of a **Portable** Robot, which has a sprayer with disinfectant and alcohol gel (avoiding close contact between people).
- Use of a **Camera** (equipped with **thermographic lens and sensor**) that will allow measuring the body temperature each time a person gets close to the radius of the object, excluding other sources of heat (software systems which use the information in real time and allow performing the traceability required for the Bio-Security Passport). This measurement is without contact with the person and of high efficiency, with programmed alerts and an acceptable precision (+/- 0,3 °C, as per the American Society for Testing and Materials). The use of this device does not exclude the use of the digital bracelet, which will also allow performing a reading of body temperature 24 hours a day (different from this camera, which will be in a fixed location at the moment of initiating the itinerary, for example: entry to the common area of the air cruise).
- Also in the light of decreasing the contact between passengers and employees (“contactless”), we are working to complete the **Incorporation of NFC Technology** in the rooms and common use areas on the air cruiser (NFC, *Near Field Communication*, one of its advantages is that it is a short range wireless technology, which does not require an internal power source in order to work and it can transmit the information from short distances). This technology standard based on the RFID identification (identification by radiofrequency) can facilitate the authentication such as the access to a room in a safe and simple way. The objective is to replace the keys and magnetic band cards, in order to avoid passengers having to constantly manipulate objects that may have be a source of contamination and contagion.

Although this new surveillance tools may be considered efficient and innovative on the sanitary prevention and control fields, they can also create concerns regarding confidentiality, privacy and ethical handling of the client’s health information, therefore, there will be a formal information with the client before the performance of the trip, about everything concerning his acknowledgement and signature of the informed consent, which will be essential in order to start the trip.

Besides the aforementioned and in relation with the third line of action of the present Protocol, there must be equipped a Procedure Room (an area on the air cruiser), provided with its respective sanitary resolution (granted by the local Health Authority), and all the equipment necessary to provide the previewed health care (from a simple procedure, to a cardiopulmonary resuscitation). The objective is to provide confidence and safety and a high standard of health care, in order to act in the case of an emergency evacuation and/or medical assistance of a severe case.

**There will be considered the following:**

- The implementation, as per the recommendations of the Chilean Sanitary Authority (Servicio de Salud Magallanes), a Procedures Room.
- The necessary medical supplies for all the medical care that might be necessary, from basic to complicated (such a resuscitation).
- Complete medical equipment (considering the necessary for a first assistance for vital emergency, while activating the protocol for emergency evacuation).
- Implementation of a First Aid kit, including medicines for cardiac arrest (authorized by the sanitary resolution).
- Medical equipment and supplies, for the performance of emergency evacuation and rescue.

Finally, we consider essential updating the current rescue protocols, emergency evacuation and any other aspect that would require activating the health emergency protocol.

**6.4 CONTINUOUS EDUCATION IN HEALTH**

Lastly, a Continuous Education in Health, will be transversal to all the rest of the aforementioned activities, therefore for each opportunity arisen, the Health Team will take the opportunity to supervise, correct, positively reinforce the basic knowledge that the passengers and employees must have regarding the issue of interest (highly contagious pathologies, such as the respiratory disease COVID-19).

This activity is defined as a supply of tools, that would allow educating (the passenger and the first line employee), and applying a correct self-care of his integral wellbeing, that is to comply with the preventive and corrective measures (all those mentioned herein) that would allow guarding their own health and the health of the rest of the travel group.

The content is detailed in Appendix 3, however we listed the most relevant (in relation with the correct compliance with the basic hygiene measures and use of PPE):

- *Washing of hands.*
- *Correct use of alcohol gel.*
- *Compliance with breathing etiquette (respiratory hygiene measures).*
- *Insurance of physical distancing.*
- *Correct use of facial mask.*

The methodology to be used will be fundamentally through spontaneous interventions, brief verbal encounters, briefings and instructions and mainly, through virtual information contained in the phone app of the protocol. Through this last technology tool, the employee and even more so the passenger, will receive short informative videos, brief animated capsules, daily advice and overview regarding the contingent sanitary measures.

## 7. APPENDIXES

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The appendixes listed next will be submitted in the **final Project**.

### **Appendix n°1: “Sanitary Certification”.**

1. *Health Evaluation* document (general physical exam and segmented, abbreviated).
2. *Risk Questionnaire* document (questions focused on the SARS-CoV-2 and other highly infectious).
3. *Informed Consent PCR Exam* document.
4. *PCR Exam* document (Procedure).
5. *Daily Health Activities* (Daily Health Control).

### **Appendix n°2: “Informed Consent”**

1. *Informed Consent* document (this document must be sent to the passenger in advance, on the date when he books his trip, since he must be informed that he will be submitted to these health control processes).

### **Appendix n°3: “Educational Program”.**

1. *Content for Passengers*.
2. *Content for Employees*.

### **Appendix n°4: “Cleaning and Disinfection Program for Environments, Luggage and Cargo, Clothes and Shoes”.**

**Appendix n°5: “Functions of the Health Management and Execution Teams”** (profile of the position, attributions and responsibilities of both teams and its members).