GUIDANCE FOR APPROVABILITY OF FESTIVALS

IN TIMES OF SARS-COV-2

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Legal Disclaimer:
The authors are aware that by implementing the recommended measures, infections of any kind cannot be fully excluded. However, this corresponds to the reality in almost all areas of daily life. It is necessary to weigh up different risk areas and to protect unique cultural live events and the associated jobs by taking responsible decisions, as well as avoid the emotional, sociocultural and economic loss due to the lack of live events.

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Executive Summary

Across Europe, the festival sector – faced with a generational challenge - has been working with unprecedented levels of co-operation to investigate operational concepts with the shared goal of re-opening safely at the earliest opportunity.

Our festival operations are always built on robust risk management processes, including for public health concerns, and as we look ahead to the beginning of the post-pandemic era, we know that pandemic specific procedures will still be needed. Festivals – and fans – are international in nature, and it is right that we aim for a common framework to manage this new risk, and to defend against similar issues in the future.

This document is intended as both a working draft and a common point of reference for our sector. Developed with the support of many of Europe's most extensive festival businesses and the input of many highly experienced festival managers as well as renowned medical experts it does not claim to be a short-cut to reopening, but rather a helping hand in a long journey.

Rather than a silver bullet, it is most likely that reopening will be enabled by a combination of progress in public health initiatives such as vaccination and a range of operational tactics from organizers such as testing, contact tracing, increased hygiene protocols, in order to manage down the residual risk. Our objective is to provide a high-quality resource available to all festival organizers with evidence and research backed concepts for a continuous risk management process within festival organization in order to keep all participants safe.

In developing this resource, we aim to focus efforts on topics that are specifically relevant to festival events – standing GA environments, seasonality, outdoor context, high capacity, camping accommodation and so on. We will of course draw on and amplify the knowledge of the wider events sector with whom we share many common problems and potential solutions.

Finally, although there is still a great deal of uncertainty, it is already clear that not all European festivals will be able to proceed as usual in 2021. The need for targeted European economic support and oversight for the sector is greater now than ever, and for us all to support our friends and colleagues, fans and suppliers, artists and workers to bring the festival sector back to life safely.

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Seasonality
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Event sector
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Status Quo

The event and culture industry is currently suffering from a far-reaching SARS-CoV-2-related ban on events. Festivals, clubs, trade fairs, sports events etc. may only take place with the exclusion of visitors or with a reduced number of visitors and under strict hygiene and distance regulations.

Although vaccination programmes have started in many European countries, at this point it cannot be confirmed that a European wide immunization will have taken place by the summer of 2021, maybe even at the start of 2022, and that the approvability of major events at full capacity can be restored for the upcoming summer season.

This is causing a significant loss to the events industry as a whole, which is not only important from a cultural, social and public health point of view, but also plays a significant economic role. The event and live entertainment sector provide jobs to millions of EU citizens every year. If, after the lost season 2020, no significant events can be executed again in 2021, the vanishing of this essential cultural heritage will commence at high speed and unemployment rates will rise massively in every single country. As raising artists and upcoming performers will be excluded from an essential platform to perform live, this will also have a significant impact on future talent development.

Most importantly, live events bring people together, and it is proven to be of significant impact on peoples' mental health, and as such there is a significate need for events to commence as soon as it can be done reasonably safe.[1] [2]

[1] https://accessaa.co.uk/wecreateexperiences-launch-experiences-important-for-mental-health/
[2] https://view.joomag.com/conference-news-november-december-2020/0215851001605882816?short& p. 8–9

Approach

Event organizers have years of experience in gathering people safely. The industry has created ways to structure knowledge sharing and new research is constantly being transferred to the field of crowd psychology, crowd movement and other relevant academia within crowd safety management. The industry core functions, examples of which could be crowd safety management, emergency and contingency management, risk management, etc., is now a mixture of practical experience and academic education.

Pan European industry leaders have taken the present circumstances as a reason to join forces on developing solutions for the approvability of festivals. As the Virus doesn't stop at borders and has become one of the biggest worldwide challenges in recent history, several European and even worldwide promotors, lawyers, medical researchers, production professionals and crowd safety managers as well as industry organizations have come together to share knowledge and national strategies to create a pan European concept in which practical and academic knowledge is being brought together for the greater good of the industry and the public.

Main aims are:

1 Creating a functional modular concept of measures for the season 2021 as a common guidance for developing aligned core protocols that allow for regionally relevant planning for the festival industry in European markets, in the light of the current status and the upcoming developments of the pandemic evolution.

2 Creating a common communication narrative, that will be organized and orchestrated by and within the local markets but lives under the strong umbrella of an overall aligned EU communication, to rebuild the trust of our customers and to help to convince politicians and the public to change the current difficult situation for event organizers.

In line with the robust and detailed nature of multi core planning for festivals, including holistic stakeholder engagement, it should be possible to move the conversation from a risk averse to a risk management position.

Summary

Incidents like the current pandemic are changing our thinking as a society, our motivation and our habits are being questioned. Therefore, the industry stands together in order to sustainably update and align our health and safety protocols, to shape festivals under reinforced hygiene perspective.

The 'Guidelines for approvability of festivals in times of SARS-CoV-2' are designed as a recommendation of precautionary measures in order to operate

— single and multi-day festivals, with or without camping
— at their full capacity from 10'000 – 150'000 daily admissions
— open air festival sites, including amphitheaters and stadia
— in cities and on country sides in different European markets
— without social distance regulations on the festival premises
— in line with a reduced transmission risk
— with a review of the event alcohol management plan and risk assessment

The goal is to create festival spaces with a minimal risk of infection. This will be possible through best practices of COVID-19 risk identification and management with combined preventive measures consisting of

— organizational and operational modifications
— increased hygiene measures
— testing and screening
— digitalization and targeted communication

as important components of the concept, which should be discussed with the local authorities involved in various action scenarios.

The measures described in the following should be considered as guidance and recommendations, as a result of the joint effort from industry professionals. In order to facilitate all festivals individually, the organizer and the authorities will need to develop specific concepts for every single festival.

Introduction

Current development SARS-CoV-2

On December 31st 2019, the WHO Country Office China was informed about cases of pneumonia of unknown aetiology, which originated in Wuhan, Hubei Province. As the cause of the disease, the novel coronavirus SARS-CoV-2, which causes the disease COVID-19, was identified by the Chinese authorities on 07th January 2020. Most people infected with COVID-19 experience a mild to moderate respiratory illness and recover without requiring special treatment. On the other hand, older people and those with underlying medical problems are more likely to develop serious illness requiring intensive medical treatment. This can, due to its rapid spread, push a health care system to the limit. Within a few weeks the virus spread rapidly, first in neighboring countries and then almost all over the world. On March 11, 2020, the World Health Organization (WHO) characterized the infection as 'pandemic'. After China was most affected in the first phase, the WHO started to consider Europe as the active center of the COVID-19 pandemic in March, followed by hotspots in the United States of America, South America and finally India. Across Europe, case numbers had doubled rapidly over periods of typically 3 to 4 days, in some countries even up to 2 days.

This threatening development made it necessary to act quickly, taking drastic measures. As of 18 March, more than 250 million people were in lockdown in Europe. Depending on the country, various lockdown strategies were implemented to counteract the exponential growth. The main focus was on the strict implementation of hygiene rules, the obligation to wear masks, travel restrictions with temporary border closures, social distancing, a general shut down of public life and a strict containment and contact tracing strategy. Public gatherings (e.g. sports events or music concerts and festivals) were forbidden or limited to a minimum number of attendees.

With the help of these stringent measures, in spring 2020 infection rates were successfully reduced and stabilized throughout Europe. This enabled a first gradual easing of the restriction from May 2020. The infection rate remained stable during the summer months and infection clusters were very well controlled. At the beginning of autumn, there were already indications of a successive new increase in the number of infections in the sense of a second wave, which developed into a sharp upturn in daily reported cases in early October. The increase of infections was also reflected in an increasing number of COVID-19 patients at hospitals worldwide. This led to a further significant reinforcement of lockdown measures of the European federal authorities to prevent the collapse of healthcare systems. Due to these measures, many countries had started to observe a stabilization in case notification rates, test positivity and new hospital/ICU admissions. Nevertheless, the absolute values of these indicators currently still remain high, suggesting that transmission is still widespread.

As of December 7, 2020, the cumulative number of confirmed SARS-CoV-2 infections worldwide exceeds 67.1 million and the number of coronavirus-related deaths exceeds 1.5 million. The underlying coronavirus has now spread to more than 190 countries. The global spread of the SARS-CoV-2 virus has hit society and the economy hard and the long-term consequences of the corona pandemic are not yet predictable. Despite intensive research, no specific antiviral therapy exists to date.

On the other hand, vaccine development and distribution is well on track: so far, there are two vaccines approved in the European Union (EU) and numerous other vaccine candidates are in development, evaluation or approval. Vaccinations were started by the end of 2020 and by January 2021 the European Commission had already secured almost 2.3 billion doses of vaccine (approved vaccines and promising vaccine candidates in the final approval process taken together). However, despite utmost efforts to accelerate the approval process, expand production capacity and ensure equitable distribution across the EU and worldwide, the availability of vaccines is currently still constrained. Therefore, each country has established priorities in terms of a national vaccination strategy. Within the first 16 days following the start of vaccination, for example, 688,782 people were vaccinated in Germany, which corresponds to a vaccination rate of around 0.82 %. This puts Germany in the middle of the field across the EU, with Denmark leading the EU with 2.02 % (as of January 11, 2021).

However, mathematical models have shown that only when immunity reaches about 70 % in the population, transmission of SARS-CoV-2 is limited to a point where community protection can be expected.[3] But a rapid achievement of this sufficient vaccination coverage is not expected. In addition, many details are currently unclear in order to derive an accurate forecast of the timeframe. Among other things, it is not possible to predict the extent to which immunity will interrupt viral transmission, and detailed data are still lacking on how effective individual COVID-19 vaccines are and how long vaccine protection lasts.

Taking the above aspects together, it can be assumed that a rapid population-wide vaccination coverage before the fall of 2021 is not expected, which will require further SARS-CoV-2-related public health restrictions in 2021 and maybe even beyond.

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[3] O. Diekmann, H. Heesterbeek, T. Britton, Mathematical Tools for Understanding Infectious Disease Dynamics (Princeton Univ. Press, 2013)

General assumptions

The 'Guidelines for approvability of festivals in times of SARS-CoV-2' are considered to be a modular concept, which can be used case by case in different European regions and markets according to their respective legal regulations and authority structures.

It is targeted to be applicable in distinct levels of a changing nature, such as 1. prevalence levels in the population due to pandemic seasons and within age groups (specified by spring, summer, autumn, winter), 2. participating age groups (including risk groups) as well as 3. social factors (e.g., a country's overall testing strategy of its population, capacities of hospitals/intense care units, availability health pass etc.), and as such be flexible and convertible in order to stay continuously relevant and efficient.

To organize the access to the venue and implement tailored hygienic measures, the participants can in general be assessed as 'presumed immune' and 'not immune', and should organizationally be divided into four sub-categories:

— People, who have had access to vaccination (official proof)
— People, who been pre-infected (within a certain time span, official proof)
— People, who have had the opportunity to get tested (official proof)
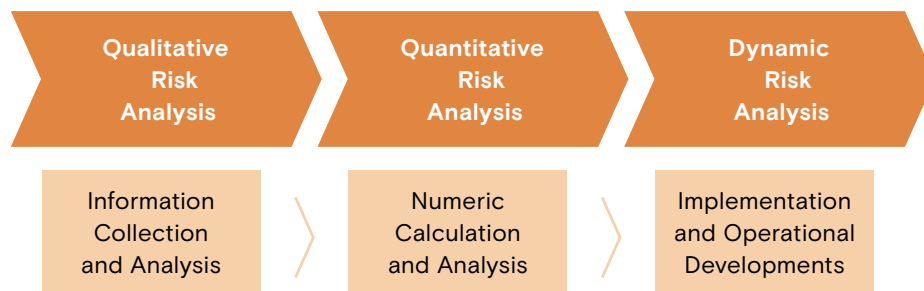— People, without expected immunity

Planning assumptions

The following parameters would need to be constantly reviewed in preparation of the festival.

— National and local restrictions, affecting the festival activity or capacity
— Functioning status of national and local public health care system, as well as other emergency services and stake holders, and the resulting capabilities of integration into the event sector
— Status of certified vaccines
— Status of testing capacities and/or manufacturing availability of rapid testing
— Current regulations on reporting newly detected SARS-CoV-2 cases
— Demographic profile of festival population
— International and national travel and public transport restrictions, as well as goods logistics

Due to the dynamic development of the pandemic as well as the protection strategies and technologies, the planning is dependent on various scenarios, that will result in different level of risk and have an influence on the type and depth of the measures. Which scenario actually could be used as a basis at the time of the respective event implementation, can only be decided upon after knowing all relevant parameters of the festival as well as the expected overall pandemic situation at the then current time. Amongst other things this will be dependent on technical, medical, legal and social developments.
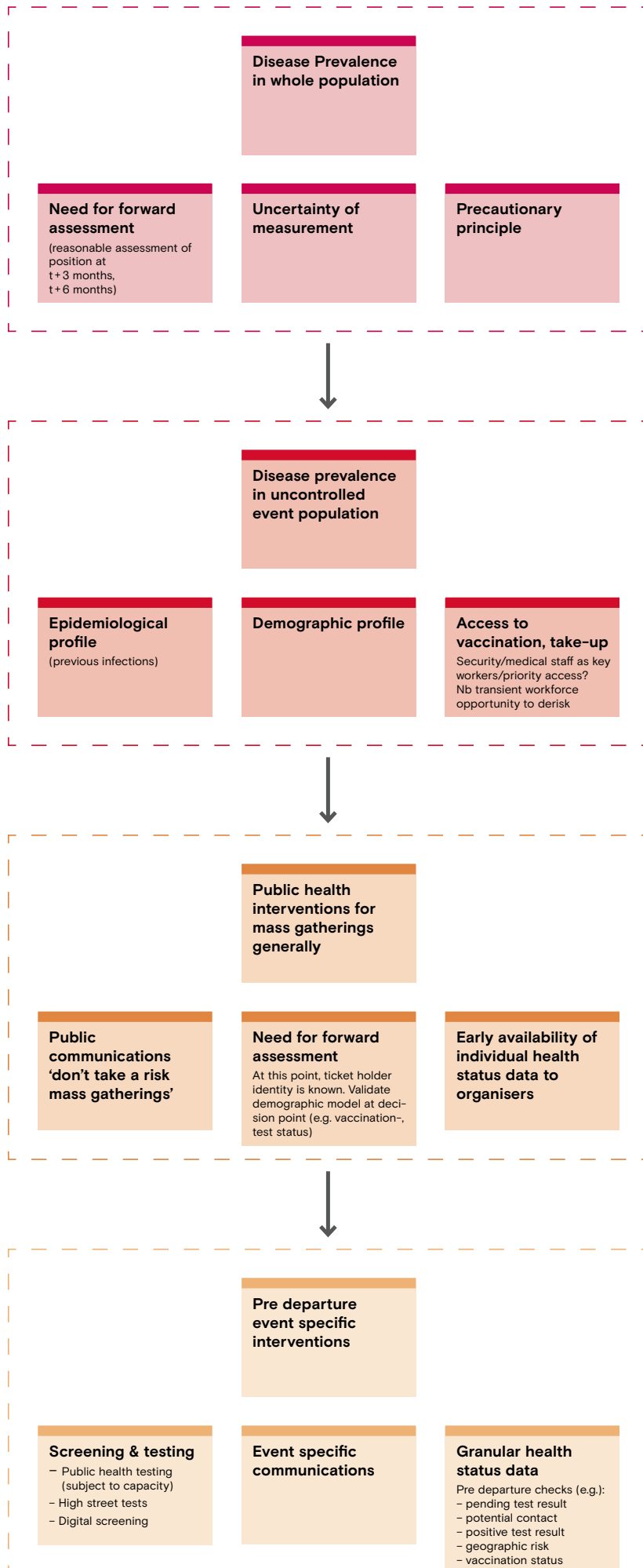
Overview Risk Management

With the integration of robust, integrated stakeholder risk management models/tool for mass gathering in line with the World Health Organization (WHO) published guidance, it is recommended that the organizer and authorities use these holistic tools for generic events, in a joint planning process. Assumptions of the status of SARS-CoV-2 pandemic for the expected time of the festival should be agreed and added to the tool. This will assist the organizer with a baseline for the risk of arranging the festival.[4]
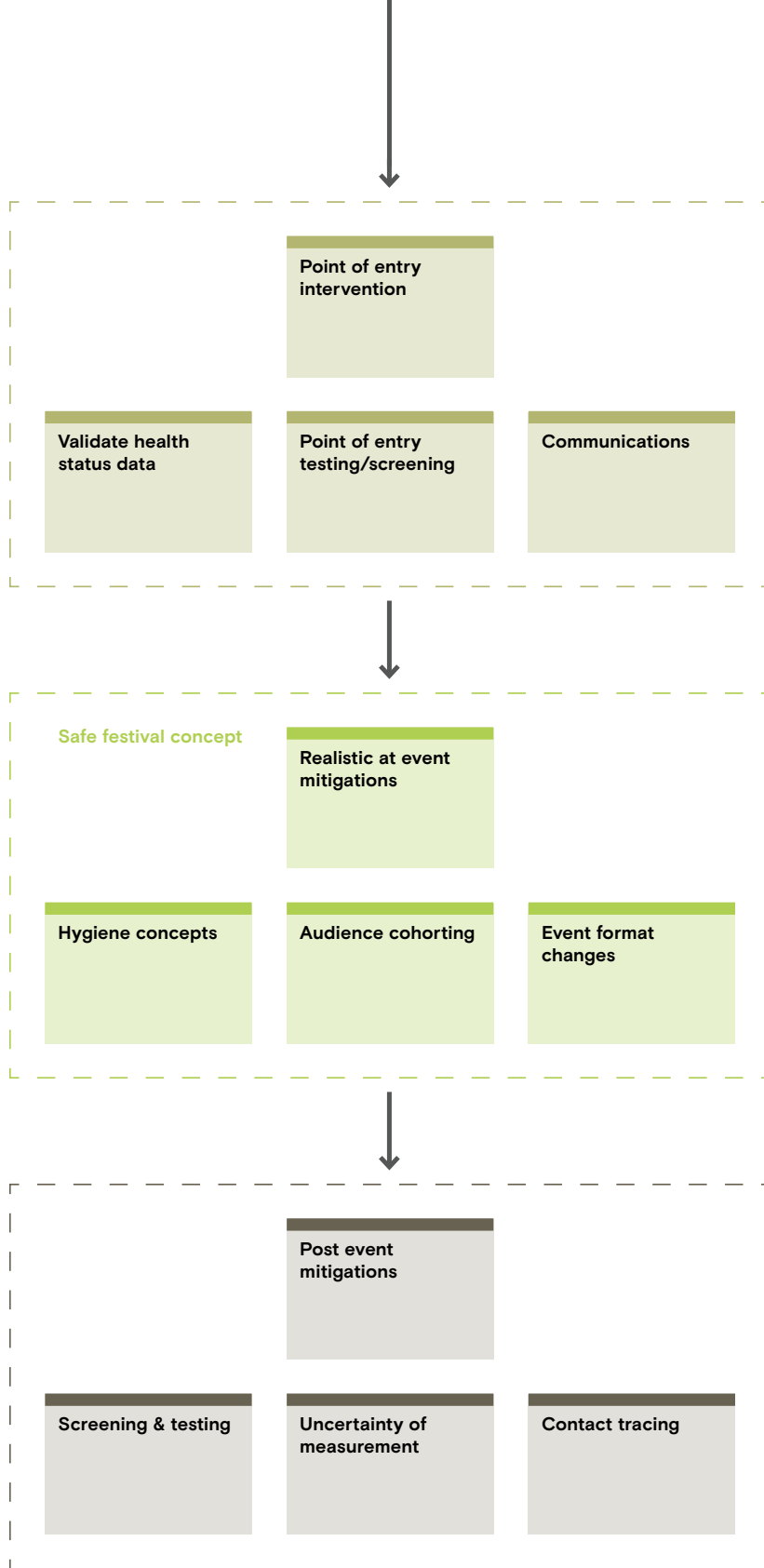
Qualitative Risk Analysis	Quantitative Risk Analysis	Dynamic Risk Analysis
Information Collection and Analysis	Numeric Calculation and Analysis	Implementation and Operational Developments

The WHO risk assessment tool can be found here.
In addition to the WHO risk assessment tool, the organizer should, as always, create a risk assessment based on his/her extensive knowledge of the specific festival.

[4] Cf. World Health Organization. 07/10, 2020. https://www.who.int/publications/i/item/how-to-use-who-risk-assessment-and-mitigation-checklist-for-mass-gatherings-in-the-context-of-covid-19 (accessed 01/19, 2021)

Disease Prevalence in whole population

Need for forward assessment
(reasonable assessment of position at
t+3 months,
t+6 months)

Uncertainty of measurement

Precautionary principle

Disease prevalence in uncontrolled event population

Epidemiological profile
(previous infections)

Demographic profile

Access to vaccination, take-up
Security/medical staff as key workers/priority access? Nb transient workforce opportunity to derisk

Public health interventions for mass gatherings generally

Public communications 'don't take a risk mass gatherings'

Need for forward assessment
At this point, ticket holder identity is known. Validate demographic model at decision point (e.g. vaccination-, test status)

Early availability of individual health status data to organisers

Pre departure event specific interventions

Screening & testing
– Public health testing (subject to capacity)
– High street tests
– Digital screening

Event specific communications

Granular health status data
Pre departure checks (e.g.):
– pending test result
– potential contact
– positive test result
– geographic risk
– vaccination status

Point of entry intervention

Validate health status data

Point of entry testing/screening

Communications

Safe festival concept

Realistic at event mitigations

Hygiene concepts

Audience cohorting

Event format changes

Post event mitigations

Screening & testing

Uncertainty of measurement

Contact tracing

Guidelines

As a result of the risk assessment process, it should be decided which of the possible prevention measures will be used at each festival, as it depends on the type of event, local promoter and authorities, as well as the prevalence of the country or local area at the time of the event. During the licensing procedure, various scenarios for measures should be discussed with the authorities.

Some of the technical solutions might not be standardized in every organization or available in each country, all of those are though available in the market already or will soon be. As such all technical solutions must also be subject to a risk assessment process for the specific festival combined with local availability.

Prevention measures (overview)

Organizational & Operational Modifications	Increased Hygiene Measures	Testing & Screening	Digitalization & Communication
Categorization of Guest Groups	Enhanced Sanitation & Cleansing, Disinfection	Presumed Immunity via Vaccination or Pre-Infection	Ticket Personalization
Admission Time Slots & ID Check	Masks	Pre-Screening, (Relevant Medical History, Proof of Status)	Contact Tracing
Access Control to enclosed Spaces	Social Distancing (in respective areas)	Testing	Cashless Payment System
Management Structure	Contactless or -reduced Interactions & PPE		Health Pass
Changes of Format and/or Site Layout			Increased Communication & Awareness Campaigning
			Refund/ Non-attendance Policy

Prevention measures (detail)

The prevention measures should be seen as modules and will be displayed and described within a customer's journey in the following. According to the national and local restriction level, legal and organizational requirements, the measures might vary and are upon decision of the local promoter in consultation with the authorities.

Pre event	1. Overall Responsibility 2. Categorization of Guest Groups 3. Ticket Categorization and Personalization 4. Health Pass 5. Refund/Non-attendance policy 6. Festival App 7./8. Increased and targeted Guest Communication
Arrival	9. Increased Hygiene Measures as per national Regulation 10. Pre-Screening 11. Increased and targeted Guest Communication
Admission to event	12. Adaption of Entrance Regulation 13. Increased Hygiene Measures as per national regulation 14. Contactless or -reduced Interaction, PPE 15. Testing & Screening 16. Increased and targeted Guest Communication
On site	17. Monitoring 18. Access control to enclosed spaces 19. Enhanced sanitation and cleansing, disinfection 20. Cashless Payment System 21. Tracing App 22. Increased guest communication/awareness campaigning
Departure	23. Increased Hygiene Measures as per national regulation 24. Increased and targeted Guest Communication
Post to event	25. Contact Tracing 26. Evaluation
Other	27. Changes of format and/or site layout

Pre-event

**Organizational
& Operational
Modifications**

1 Overall Responsibility

The promotor should ensure that a general health risk organization with various tasks and responsibilities needs to be implemented within the management structure for prevention measures related to SARS-CoV-2. Depending on the size of the festival a person or team needs to take responsibility to ensure that the planned prevention measures are mutually agreed upon with local authorities as well as aligned with the combined planning of the festival and spread within the organization.

It is recommended that the actual solutions and planning is created in close relation with the department or team normally planning the specific aspects of the festival. The responsible person or team should be describing the measures implemented and following up upon the execution of the actual measures in order to liaise with local authorities that the prevention measures are implemented and working as intended.

2 Categorization of Guest Groups

In the pre-event phase, the promotor should divide the participants in the above 4 sub-categories: vaccinated, pre-infected, tested and without expected immunity. This might reflect in the ticketing process, as well as entrance handling, but also in the other measures that need to be implemented. Assumptions of the number of persons in each category can be defined based on the audience profile in relation to the national figures of vaccination and infection statistics. As an example, it could be relevant to create an age profile of the audience and staff, as this can assist with assumptions on how many of the participants can be expected in each category.

2.1. Vaccination

Ticket holders with status of vaccination should be able to prove their vaccination status. The vaccination should be with a vaccine approved in the country in which the festival takes place and in the required quantity for complete protection, (normally 2 times at the interval specified for the vaccine). Proof of vaccination (digital or analog) may be part of the arrival strategy and in that case be presented latest before entering the event and should contain relevant information, such as:

— Name, date of birth and address of the ticket holder
— Name of the vaccine (only approved vaccines should be accepted)
— Date, time and quantity of vaccination
— Name and address of physician
— Stamp and signature of physician

As vaccinations have just started, it is unclear at this point (beginning 2021) whether vaccinations protect against infection and transmission of the virus as well as for how long a protection will potentially last. Clarity is expected by the end of February.

2.2. Pre-infection

Ticket holders with status of pre-infection must prove their status, whereby the infection should not have occurred earlier than three months before the festival takes place (according to the current knowledge of beginning of February, 2021). In order to accommodate developments in research, it is highly recommended that the period of time of assumed immunity is agreed with national health authorities, providing it is requested to be longer. Therefore, the day of the first positive PCR result will be considered. Certificates of proof need to be presented before entering the event and should contain relevant information, such as:

- Name, date of birth and address of the ticket holder
- Date of positive PCR result, method of swabbing, testing method, name of lab
- Name and address of physician/lab

2.3. Tested

Ticket holders who have had the opportunity to get tested in a certain amount of time before the admission to the festival have to prove their status. In order to use this strategy, it is recommended to define acceptable specifications (such as period of time, lab method) in line with local authorities. Certificates of proof need to be presented before entering and should contain relevant information, such as:

- Name, date of birth and address of the ticket holder
- Date of negative PCR result, method of swabbing, testing method, name of lab
- Name and address of physician/lab

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2.4. Without expected immunity

Ticket holders without expected immunity can be subject to a testing scheme, depending e.g. on the over-all national SARS-CoV-2 protection strategy and local discussions with authorities and organizers. It is recommended to inform the ticket holders that the access to the festival will be declined, until they are able to prove to which of the above categories they belong to.

If a general testing strategy for all guests without expected immunity is implemented, ticket holders who are tested positive will be declined access to the festival and reported to the health authority according to national regulation. If they are shown to be infected after entry, they will be asked to leave the festival and follow the local regulations.

It could be considered if teams or staff should be sectioned in a way that improves operational reliability. If one person in a team is infected, the local regulations may stipulate that the whole team needs isolation which might lead to significant disruption to the pre-event phase.

In general, the organizer should feel socially responsible for a sympathetic and ethical handling of those participants, who test positive.

Increased Hygiene Measures

In the pre-event phase, it is recommended that the promotor re-evaluates all hygiene measures on the premises based on the current or to be expected pandemic situation.

Testing & Screening

Understanding the local testing schemes and national testing strategy is important. It is recommended to use the pre-event phase to learn how documents for validation are handed in and what they look like. Staff needs to be trained to recognize invalid documents in this case. Possibly, any validation of certificates can be done electronically prior to arrival on site.

The actual scheme for testing or screening upon arrival has to be planned. Can the official testing strategy handle the number of tests needed in the industry or is there a need for implementing own testing facilities? If private testing is decided to be required, evaluate if there are companies that have the experience to run facilities or if the promotor has to train and build facilities, if there are public testing stations that could be implemented in the event organization, or if rapid testing at home is an acceptable solution in line with the local authorities. All types of testing should be evaluated and agreed with national health authorities.

Digitalization & Communication

3 Ticket Categorization and Personalization

3.1. Ticket Personalization
In order to direct communication, ensure traceability of chains of infection and create common understanding of the prevention measures, it is recommended that all tickets are exclusively personalized. During sale or latest upon arrival, all relevant contact data for possible contact tracing as well as for the traceability of chains of infection are queried and stored on secured servers, e.g. provided by the ticket sales company. In case of an infection on site, this data can be handed over to the local health authority upon request.

3.2. Ticket Categorization
If possible, the categorizations of guests should be done as a part of the ticket sales process. If the validation is done on site as a part of the entry system, it can de-crease the access flow and lead to the need for additional entry staff and gates.

For further information with regard to organizational categorization of participants please also see 11.1. Entrance Categorization.

4 Health Pass

Some companies, and governments, are working on a digital solution, to show the categorization of guests. This digital solution has been mentioned as a 'Health Pass'. If such a digital solution is available in the country of the festival, it is highly recommended to use this as a validation of the categorization of the guests. In some cases, the digital solution can be linked to the ticket activation system. This can improve the validity of the screening at the entrance, but also improve the flowrate through the entrance, and as such be of great value for the promotor.

5 Refund/Non-attendance policy

The refund and non-attendance policy should be aligned within the Terms & Conditions prior to the start of ticket sales. Visitors should be explicitly informed of this before or when purchasing a festival ticket. Information may include, among other things, the obligation to provide case-related and relevant personal data with regard to data protection, procedures for ticket refunds in case of cancellation due to e.g. illness, indisposition, proven infection and subsequent quarantine, as well as sanctions in case of non-compliance with on-site measures during the festival.

Gaining a common understanding and forming a clear policy prior to the event is recommended as part of creating a safe festival.

6 Festival App

Often festivals use an App presenting the program, maps and other festival information. If this App can be used for targeted communication, it is highly recommended that SARS-CoV-2 information is adapted to the communication sent out or implemented in the App.

Easy access to information regarding prevention measures is recommended. It must be expected that this information is of utmost interest for the patrons and staff.

7 Website, Social Media Updates, Media Releases

An elaborated communication strategy depending on the festival concept includes regular information integrating the current situation in a proactive tonality ('We are here, and we care for you'). This raises the reputation and trust not only in the festival but also in the organizer.

Within the festival's website an easy to be located specific SARS-CoV-2 section should be integrated, that displays and explains all taken measures, including a potential testing strategy.

It is recommended to send out a dedicated 'SARS-CoV-2' mailing with regard to the planned prevention measures at least 1 week before the festival and repeatedly immediately (24h) before with possibly newly added important information about the current situation and the measures, changes or announcements to be taken.

8 Targeted Mailings

    8.1. Short-term changes of regulations and procedures

Due to ticket personalization, it is possible to send special information only to relevant visitor groups from e.g. a certain region, state, postal code group. Therefore, changes in regulations and procedures, prohibitions of accommodation for people from certain areas, etc. can be sent out in a targeted manner without creating uncertainty among other visitors.

    8.2. Risk groups

Risk groups can be identified in advance during a registration process in the visitor management portal, by e-mail but at the latest during the evaluation of the anamnesis questionnaires. Under certain circumstances, these persons can be dealt with separately in the organizational processes if necessary and on request.

Arrival

Organizational & Operational

It is recommended to re-evaluate all protocols within the specific event organization, such as the overall arrival strategy (e.g. how to handle break down of 'Health Pass', prolonged screening and access times, how to handle persons who test positive etc.)

Increased Hygiene Measures

9 Hygiene Measures as per national regulation

    9.1. Masks

The use of mask should be in alignment with national regulation, however if social distancing is not implemented, the recommendation for the audience to wear masks should be considered.

As a mechanical barrier, mouth and nose covers can help reduce the spread of virus-containing droplets and aerosols, especially if the required distance of cannot be maintained continuously.

    9.2. Social Distancing

The probability of coming into contact with virus-containing droplets and aerosols is increased, especially within a radius of one to two meters around a person infected with the SARS-CoV-2 coronavirus. It is recognized that social distancing is a tool on mitigating the risk of transmission and could be adhered whenever possible and required upon arrival.

10 Pre-Screening

The pre-screening and validation of any proof should preferably be handled digitally. Depending on the planned scenario, all guests will be asked to provide documentation of vaccine, pre-infection, anamneses or test as a part of the ticket control. This can be done by screening via a technical solution e.g. an application for phones working as a 'Health Pass', or through other forms of official documentation.

10.1. Relevant Medical History

A highly recommended and maybe even required tool would be pre-departure checks including anamneses questionnaires in order to ask the guests before starting their travels about their current health status, to pre-check for potential symptoms and engage them to rather stay at home if they feel sick.

10.2. Proof of Status

Obtaining detailed information includes also requesting for the vaccination status, a potential previous illness of Covid-19 or a test within a safe and relevant window of time of the visitors, as well as the respective official proof. This may result in advantages, such as an entry via fast lane.

Ticket holders with the pre-proofed status of vaccination and/or pre-infection can directly approach the respective entrances. Ticket holders without expected immunity require to be defined extra measurements, yet in any case will potentially take more time.

**Digitalization
& Communication**

11 Increased and targeted guest communication

Research and operational knowledge show that the audience is willing to work with the promotor in order to create a safe environment. In order to make this happen, however, communication is the essence.
A transparent and proactive information policy is recommended in order to ensure that risks are handled sensibly and in unanimity with the patrons. This applies to the visitors as well as to the employees. The result of an authentic, reflected and thus credible risk communication is likely to be trust-building, which helps in order to implement and push through the protective measures.

11.1. General hygiene measures

The hygiene measures as per national regulation are usually already communicated by public transport companies within their respective communication concept. Therefore, communication most probably would only need to be added in cooperation between the transport companies and the organizer. Special additional information that is relevant in the organizational sense can also be placed here if necessary.

11.2. Awareness

In order to make visitors aware of the prevention methods taken and to promote compliance with them, information during the journey is also integrated into push notification on the Festival App (if available) and via social media.

11.3. Personal address by festival staff

Due to the special situation, it is recommended to deploy staff more intensively than usual in front of the entry areas, who can explicitly point out special admission procedures, prevention methods, non-compliance with the prevention methods and answer questions.

Admission to event

Organizational & Operational Modifications

12 Adaption of Entrance Regulation

12.1 Entrance Categorization

With regard to a targeted customer's journey, it is recommended to organize special entrances for the pre-set four guest categories: vaccinated, pre-infected, tested and no expected immunity. The guests should be provided with admission tickets in the respective categories.

Ticket holders with a pre-proofed status of vaccination, pre-infection and/or negative test result can walk through fast lanes, without showing any proof of status or stigma.

Ticket holders without expected immunity require to be defined extra measurements, yet in any case will potentially take more time.

12.2. Admission time slots & ID check

In order to prevent a possible backlog at the screening area or entrance (or parking and camping for festivals who offer camping), visitors book a time slot in advance.

During the admission to the festival, the identity of the visitors is checked by presenting their identity card/passport and verifying their name on the ticket. This is used to prevent the transfer or resale of tickets. Furthermore, a pre-installed tracing App can be opened and shown to the admission staff.

In order to maintain a high level of service and health safety the promotor should consider how line management can be created. Time slots for arrival can be a specific tool for this task.

13 Hygiene Measures as per national regulation

13.1. Masks

The recommendation in the home environment is to use 'everyday masks' and might therefore find its application within the guest group in required areas (entrance, if applicable indoor, sanitary areas).

For all those involved in production, e.g. artists, touring crew, production staff, the respective local Health & Safety regulations as well as local authority requirements would need to be assessed. This might enable a common standard for all people involved and different effects of everyday masks are avoided (cotton coverings, shawls, scarves, etc.). Masks with a higher protective function (FFP-2, KN95) could also be used at defined points in the production process as per required regulations.

13.2. Social Distancing

A great part of visiting a festival is being together. During a concert, and during the other experiences of the festival, it has been evaluated that social distance is not able to maintain without changing the core value of festivals. The current governmental strategies (beginning of 2021) with regard to SARS-CoV-2-management and its inclusion of social distancing is acknowledged, yet the overall risk identification, control and mitigation during the festival organization can help reduce overall risk without the inclusion of social distancing.

If festivals are working with screening as a part of the entry system a minimum distance in reference to the national general regulation, is communicated by the promoter in all areas before the screening of the test area.

The promotor will ensure that social distance can be adhered to until the screening of the 'Health Pass' has been carried out.

14 Contactless or -reduced Interactions, PPE

Where possible, contact should be avoided, limited or reduced. Especially within the group of production staff, who is naturally exposed to a high number of people, e.g. check in and entrance personnel, security and gastronomy, additional measures can be thought about:

— Digitalization of check in and entrance processes, e.g. self-scan
— Send out of wristbands and credentials prior to the festival
— PPE
— Contactless storage facilities
— Separation of guests and staff through acrylic glass at food and beverages stands, info points, help desks

15 Testing

The use of antigen tests can help detect infected people and thus reduce the overall risk of the infection spreading.

The extent to which a test strategy can and must be integrated into the respective event planning is not only dependent on the festival duration, internal planning processes and structures but also on external factors, such as the national testing strategy, developments and research in the field of test procedures, availability of test capacities, accompanying technical and digital processes as well as data protection guidelines.

Depending on the modular application, the implementation of this measure requires intensive and very precise planning and is associated with a drastically increased technical and personnel expenditure. At the current state of the development of test procedures, the implementation should lead to considerable costs. The assumption of costs by the organizers is therefore still an important point of discussion at the moment, as this could make it impossible to hold festivals. Allocation of these costs to the participant or to the legislature would have to be checked and discussed in detail.

Depending on the planned testing and screening scheme, the testing and screening would apply to the category of 2.4. without expected immunity and the ones that were not able to proof their status of vaccination or pre-infection.

Various methods are available for testing of acute infections. Taking all advantages and disadvantages into consideration, a rapid antigen diagnosis with a CE approved test system is the most practical and fulfills medical requirements.

For SARS-CoV-2 diagnostics, the PCR (polymerase chain reaction) still remains the gold standard. This involves direct detection of the virus on the basis of its RNA. So-called dual-target systems are recommended, which detect two different gene segments from the virus genome and are the reason for the high sensitivity and specificity. On the downside, PCR tests are expensive and time-consuming in the evaluation.

Rapid antigen tests also detect the virus directly. However, it is not the viral RNA that is detected, but viral proteins (=antigens) on the surface of the virus, with the help of specific antibodies. Compared to PCR tests, rapid antigen tests have a reduced sensitivity, and a positive result can only be expected at a higher viral load. In antigen tests the parameters 'sensitivity' are particularly important, i.e. how reliable is the test in order to recognize sick people, and the 'specificity' so that the test does not have a positive result in actually healthy people. The likelihood of false-positive results depends largely on the product used, even if most providers are already reliable.

Beyond that, rapid antigen tests stand out due to their availability, being much cheaper and faster than PCR tests. The sampling time is approx. 2 minutes and the evaluation for some approved tests takes approx. 15 minutes, thus being particularly suitable for use on site as point-of-care tests and for examining larger sample quantities.[5]

Due to its limitations, the result of a (negative) antigen test is only valid for the same day (not for multiple days).

The extraction of a sample as an invasive treatment should currently only be done by trained personnel under medical supervision and is based on the local requirements.[6]
The test results of the participants are sensitive personal health data and therefore needs to be protected. Each ticket holder can be assigned to a time slot and location in advance for the testing. It is recommended, that these can be booked online in advance for individuals and groups.

A detailed flow chart of the testing process including a possible setup of a testing station is attached to this concept in Annex 3.

**Digitalization
& Communication**

16 Increased and targeted guest communication
   16.1. Information banner/signage
The hygiene measures will be supplemented by a poster/banner until shortly before the entrance areas. Other important further information, which is considerably relevant in the operational sequence organizational sense, can be placed here again, if necessary.

   16.2. Personal address by festival staff
Due to the special situation, it is recommended to deploy staff more intensively than usual in front of the entry areas, who can explicitly point out special admission procedures, prevention methods, non-compliance with the prevention methods and answer questions.

[5] M. Ghaleb, F. Kainzinger, F. Heppner, B. Gärtner, T. Meyer. 'Beurteilende Einordnung unterschiedlicher Labormethoden zur SARS-CoV-2-Diagnostik im Kontext des Betriebs professioneller Sportveranstaltungen und -ligen.' 02. 11 2020, p. 4
[6] https://erj.ersjournals.com/content/early/2020/11/26/13993003.03961-2020

Organizational & Operational Modifications

17 Monitoring

As stated under 1. 'Overall Responsibility for the Prevention Measures' a person should be assigned who is responsible within the organization to ensure that the SARS-CoV-2 risk reduction is implemented and working as agreed in the permit to run the festival. This person can have an organization or a team to monitor the operation, but the responsible person should provide documentation should this be mutually agreed with the authorities.

18 Access control to enclosed spaces

In order to protect enclosed spaces such as indoor areas or sanitary facilities from overcrowding and therefore from a too high concentration of aerosols, access to the premises is controlled and a pre-determined queue management system. The maximum number of persons for each indoor space should be defined as per national regulation and controlled.

As it has been proven that ventilation is a significant factor of the spread of aerosols, we recommend that indoor stages are validated specifically in comparison to the local laws and guidelines. This could be limited capacity, need for face masks, rules of social distance or only seated concerts. This must be discussed between the promotor and the authorities and is much related to the actual ventilation in the building. Covered, but open sided, tent stages are equivalent to outdoor stages providing a minimum of 2/3 of the tent sides are open.

Increased Hygiene Measures

19 Enhanced sanitation and cleansing, disinfection

To reduce the aforementioned risks, the simplest measures of enhanced hygiene can be implemented:

— Coughing and sneezing should always be done in a disposable handkerchief, which is then disposed. If there is no handkerchief available or to hand, it is better not to hold your hand in front of your mouth, but rather use the crook of your arm.
— Hands should be washed with soap thoroughly as often as possible – especially before and after every meal, after using the toilet and after contact with other people. Even after sneezing or coughing and before and after putting on/taking off the face mask, hands should be washed with soap.
— If possible, touching the mouth, nose or eyes with the hands should always avoided. Hands can transmit pathogens that can adhere to surfaces and objects after contact.
— Instead of washing hands, one can always disinfect the hands. This is especially true if there is no sink with fresh water available. It must be taken care of that the disinfectants are meant for use on the palms of the hands (not surface disinfection) and that they are at least 'limited virucidal'.

Testing & Screening

According to the current state of knowledge there are no additional measures recommended at this point.

Digitalization & Communication

20 Cashless Payment System

In order to reduce the risk of infection by touchpoints, it is recommended to utilize cashless payment. The option of cashless payment could be offered at all sales points during the festival. The range of systems can relate to payment methods known from everyday life, such as cards, mobile payment systems such as Apple or Google Pay as well as event-specific RFID systems.

To implement cashless payment systems, high infrastructural efforts may have to be made in order to ensure the required reliable online connectivity and the hardware equipment in sufficient numbers at the sales outlets

21 Tracing App

If the authorities have provided a tracing App, the promotor should recommend that all patrons have the App installed and active. A corona 'warning' App is generally published by federal governments in order to intend interrupting chains of infection by means of tracing. The App uses various the Bluetooth technology integrated on modern smartphones to anonymously record the distances and the duration of the encounter with other people who have also installed the App on their smartphone and to store them decentralized) in the App for a certain period of time. If a person is than found to be infected, the result of the test can be displayed anonymously, and all contacts concerned receive a message via their smartphones as well as an information about corresponding rules of conduct.

In general, it should be noted that older smartphones do not always meet the technical requirements for using the app. A time-limited battery life of smartphones and the fact that festival visitors can interrupt the tracing at any time by deactivating the Bluetooth function using the app can be counteracted by organizational means such as sponsorship charging stations and targeted communication.

Smart wristbands are to be named as an alternative to existing tracing, but due to the high technical, organizational and personnel effort at the current time, need to be critically assessed in terms of an implementation.

Due to the ticket personalization all personal data is collected and stored. For further information please refer to 24. Contact Tracing.

22 Increased guest communication/awareness campaigning

Any prevention measures taken in the context of infection control can be accompanied by communication tools to develop their maximum effectiveness.

On the premises there are several opportunities to add up the existent communication measures or tools, as well as implement new ones in such circumstances:

- Information banner/signage
- Printed sitemap
- Personal address by festival staff
- Awareness: Mobile teams and drop-in point onsite
- Social Media/Push Notifications via Festival App
- Video Screens Stages and/or Crowdflow Signage
- Speaker/Moderator

Departure

**Organizational
& Operational
Modifications**

It is recommended to re-evaluate all protocols within the specific event organization.

**Increased Hygiene
Measures**

23 Hygiene Measures as per national regulation

When leaving the festival site, all participants are asked to wear their mask and to observe the applicable distance rules according to existent public regulations.

**Testing
& Screening**

According to the current state of knowledge there are no additional measures recommended at this point. An exit testing strategy of all participants when leaving the festival site should be difficult due to the rather diffuse end of open-air festivals. In addition to the operational challenges, the value of such a procedure is likely to be insignificant, since all measures prior to the admission aim to reduce the number of undetected infectious participants to a minimum.

Digitalization & Communication

24 Increased and targeted guest communication
   24.1. Personal address by festival staff

Attention is also drawn to the protective measures taken when leaving the festival grounds. Especially with regard to the return journey to the home areas, it is very important to continue to ensure that visitors comply with these measures and to draw attention to possible non-compliance.

Post to event

Digitalization & Communication

It is recommended to re-evaluate all protocols within the specific event organization.

Increased Hygiene Measures

Not required.

Testing & Screening

According to the current state of knowledge there are no additional measures recommended at this point.

**Digitalization
& Communication**

25 Contact Tracing

Due to the ticket personalization all personal data is collected and stored for a period of time either regulated by law or agreed with the authorities, in order to hand them over to the authorities in case of infection. Complete traceability via contact details is secured. This data will be deleted after the officially agreed period of time.

26 Evaluation

As part of a survey to evaluate the event, the event organization and the protective measures, guests as well as artists and staff, can actively participate and express their views. It is important that the process is presented as an accountable process, e.g. input from insurance companies could be used to help drive the correct topics.

Other

**Organizational
& Operational
Modifications**

It might be evaluated if indoor stages should be changed to outdoor stages, or if areas maybe should be adjusted in square meters available for audience. It has to be considered that venue and site planning can be affected by prevention measures.

27 Changes of format and/or site layout

Potential changes of format:
— Reduction of festival duration
— Hybrid festivals (partly virtual)

Potential changes of site layout:
— Adaptation of the access points and routes
— Dissolve the separation of parking and camping
— Strict separation of ingress and egress
— Implementation of one-way regulations on the traffic routes, in stage or tent operations
— Division of areas/front stage areas

Attachments

Testing Methods (Annex 1)
Exemplary Use of Testing – Adaptable Modules within Entrance Scenarios (Annex 2)
Exemplary Use of Testing – Rapid Testing Flowchart (Annex 3)

Annex 1
Testing Methods

Existing Test Procedures

There are currently the following three different test methods for the SARS-CoV-2 virus, which causes the disease COVID-19:

- Direct pathogen detection using RT-PCR
- Antigen test
- Antibody test (indirect detection of an infection)

When performing diagnostics, it must be taken into account that with SARS-CoV-2 tests, due to statistical measurement inaccuracies in practical application, 100 % accuracy of the test results cannot be achieved. A negative result does not rule out the possibility of infection with SARS-CoV-2.[7]

Before going into the individual test procedures in detail, the advantages and disadvantages of the individual test procedures can be summarized as follows: RT-PCR tests are currently the 'gold standard' for the detection of SARS-CoV-2, with the highest sensitivity and specificity. In addition, these tests can already successfully detect SARS-CoV-2 during the incubation period, i.e. before signs of symptoms. The disadvantage of RT-PCR tests are the longer processing times and the higher costs. In contrast, there are antigen tests that do not necessarily require a fully equipped laboratory to determine the test results but can be evaluated on site and are cheaper. However, the sensitivity and specificity are lower than with PCR diagnostics. The third test method, the antibody test, is an indirect test with regard to the detection of antibodies in the respective test person. Antibodies can only be detected after about two weeks at the earliest. An antibody test cannot detect an acute infection. Due to the time lag of the antibodies formed, the antibody test for the acute diagnosis of the SARS-CoV-2 pathogen is not recommended by the Robert Koch Institute (RKI).[8]

Polymerase chain reaction (PCR) Method

In order to detect an infection with the SARS-CoV-2 virus, PCR test systems were developed and validated early in 2020. The virus genome is detected directly with the RT-PCR test (Real-Time Polymerase Chain Reaction) using highly sensitive, molecular test systems. The PCR is currently the gold standard for the diagnosis of an acute infection with the SARS-CoV-2 pathogen.

So far, several different test systems have been developed in the laboratories that deliver a high level of specificity and require different processing times.

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[7] Woloshin, S., Patel, N., and Kesselheim, A.S. (2020)
False Negative Tests for SARS-CoV-2 Infection – Challenges and Implications. N Engl J Med 383, e38

[8] M. Ghaleb, F. Kainzinger, F. Heppner, B. Gärtner, T. Meyer. 'Beurteilende Einordnung unterschiedlicher Labormethoden zur SARS-CoV-2-Diagnostik im Kontext des Betriebs professioneller Sportveranstaltungen und -ligen.' 02. 11 2020, p. 4

Potentially ill people are tested if one or more symptoms or other findings that support suspicion of COVID-19 disease are present. The sample for the PCR examination is taken by a swab in the nose/throat area (naso-/oropharynx) and examined in the laboratory. The detection of the virus genome achieves a high level of sensitivity.[9] A measured variable for determining the test accuracy of various test methods is the virus concentration (virus copies/ml) that a test system needs to make a statistically significant statement as to whether a test is positive (sensitivity; limit of detection). In general, RT-PCR tests require a lower virus concentration than other test systems and are therefore more accurate than other methods when used properly.[10] Some RT-PCR test systems can detect virus concentrations of 500 or less virus copies/ml. The American approval authority (FDA) has published a comparative overview of many commercial test systems and their detection accuracy.[11]

Depending on the test system, it usually takes between 2.5 and 4 hours to determine the RT-PCR test results in the laboratory (pure analysis time only). In the last few months, modern process steps have been used to develop test procedures that enable a PCR in the point-of-care format (rapid test in the narrower sense). The duration of these procedures (including LAMP PCR, nested PCR) is less than an hour (including from Qiagen, Cepheid, Bosch, Spindiag).

Implementation process and requirement
Medical personnel are required to take the nose/throat swab. The professional implementation of the smear reduces false negative results. All samples should be processed in a medical laboratory as soon as possible after they have been taken in order to guarantee the quality of the test results and to initiate any necessary measures quickly. The test should be performed within a maximum of 72 hours to ensure the stability of the sample material. If there is a longer process time between removal and test execution, the sample must be stored and transported at 4°C.

Interpretation of test results
At the onset of symptoms, studies have shown that sample materials from the nose/throat area of SARS-CoV-2 sufferers can contain high virus concentrations. PCR testing can detect the virus genome several days before until 20 days after the onset of symptoms. In elderly patients, the virus genome can be detected up to 7 days before the onset of symptoms and in individual cases up to 60 days after the onset of symptoms. Thus, due to its high sensitivity and low detection limit (LoD), PCR diagnostic can also be used to specifically identify infected people at an early stage.[12]

Many diagnostic processes of SARS-CoV-2 infected persons do not always show clear findings. For example, the target genes examined in a PCR can provide contradicting statements and 'weakly positive' findings can occur. If the PCR results are unclear or implausible, an experienced doctor must carefully assess and validate the constellation of findings. A negative PCR result does not rule out the possibility of infection with SARS-CoV-2. According to the RKI, poor sampling quality is the most common cause of false negative results. Improper transport or an unfavorable smear time for taking the sample can also lead to false-negative results.

[9] Xiao, A.T., Tong, Y.X., Gao, C., Zhu, L., Zhang, Y.J., and Zhang, S. (2020). Dynamic profile of RT-PCR findings from 301 COVID-19 patients in Wuhan, China: A descriptive study. J Clin Virol 127, 104346.

[10] Dinnes, J., Deeks, J.J., Adriano, A., Berhane, S., Davenport, C., Dittrich, S., Emperador, D., Takwoingi, Y., Cunningham, J., Beese, S., et al. (2020). Rapid, point-of-care antigen and molecular-based tests for diagnosis of SARS-CoV-2 infection. Cochrane Database Syst Rev 8, CD013705.

[11] https://www.fda.gov/medical-devices/coronavirus-covid-19-and-medical-devices/sars-cov-2-reference-panel-comparative-data

[12] Singanayagam, A., Patel, M., Charlett, A., Lopez Bernal, J., Saliba, V., Ellis, J., Ladhani, S., Zambon, M., and Gopal, R. (2020). Duration of infectiousness and correlation with RT-PCR cycle threshold values in cases of COVID-19, England, January to May 2020. Euro Surveill 25.

Antigen diagnostics Method

Another method for SARS-CoV-2 diagnostics is the antigen (rapid) test. The virus genome is not detected, but proteins that the SARS-CoV-2 virus presents on the surface.

The advantage of the antigen test is that it can usually deliver faster results. Within a few minutes, it can identify an acute SARS-CoV-2 infection from a nasal/throat swab.

Implementation process and requirement

In order to avoid false negative results, all previously approved test systems still require medically trained staff to take samples. Unlike for PCR diagnostics, samples do not necessarily have to be sent to a laboratory. The result of the examinations can be determined on site. However, this requires a suitable room for taking samples and performing the test.

Interpretation of test results

Antigen tests can be used in well-defined scenarios. The sensitivity of antigen tests is significantly lower than that of PCR (more false negative results) and the detection limit is higher.[13] In order to assess how good the sensitivity of an antigen test is and how it can detect viral proteins, further measured variables must be used. This includes the protein concentration (pg/ul) and the number of infectious particles. There are currently no reliable data on the performance of the antigen test procedures in infected people before the onset of symptoms.

Analyzes of the first antigen test methods approved in the USA assume a converted detection limit (LoD) of 6 million units.[14] This corresponds approximately to a factor of 1,000 in comparison to PCR diagnostics (depending on the PCR test system used). Other studies also confirm this difference in the sensitivity and detection limit.[15]

However, comparisons with the virus culture show that the antigen test has a detection limit similar to that of the virus culture and can therefore be used as a measure of infectivity.[16]

In addition, it should be noted that the development of improved SARS-CoV-2 antigen tests is subject to high dynamics and that progress can be expected in this area in the near future and corresponding scientific validation procedures will allow a more precise assessment of the performance of existing antigen tests.

[13] Diao, B., Wen, K., Chen, J., Liu, Y., Yuan, Z., Han, C., Chen, J., Pan, Y., Chen, L., Dan, Y., et al. (2020). Diagnosis of Acute Respiratory Syndrome Coronavirus 2 Infection by Detection of Nucleocapsid Protein. medRxiv.

[14] Arnaout R, Lee RA, Lee GR, et al. SARS-CoV2 Testing: The Limit of Detection Matters. Preprint. bioRxiv. 2020; 2020.06.02.131144. Published 2020 Jun 4. doi: 10.1101/2020.06.02.131144.

[15] Mak GC, Cheng PK, Lau SS, et al. Evaluation of rapid antigen test for detection of SARS-CoV-2 virus. J Clin Virol. 2020;1 29:104500. doi: 10.1016/j.jcv.2020.104500.

[16] Van Kampen A, van de Vijver D, Fraaij, P, et al. Shedding of infectious virus in hospitalized patients with coronavirus disease-2019 (COVID-19): duration and key determinants. medRxiv 2020.06.08.20125310; doi: https://doi.org/10.1101/2020.06.08.20125310

Antibody diagnostics Method

In contrast to RT-PCR and the antigen test, an antibody test (serological test procedure) does not detect the virus itself, but the reaction of the immune system to the virus. It detects virus-specific antibodies that are formed in the body from about two weeks after a SARS-CoV-2 infection.[17] Antibodies are detected by taking a blood sample and then testing it in a laboratory.

Various test formats are currently available for the detection of a previous SARS-CoV-2 infection. Due to the delay in the formation of antibodies, the RKI does not recommend the antibody test for acute diagnosis.[18]

Implementation process and requirement

Blood collection should be done by medically trained personnel. The sample is then sent to a human medicine laboratory and processed there. The pure analysis time for antibody diagnostics on a high-throughput device is approx. 30 minutes.

Interpretation of test results

The interpretation of serological test results must take into account the pre-test probability, the respective epidemiological situation and knowledge of the specificity/sensitivity values of the test system used.[19] There is currently no clear statement about the infectivity, or the immune status of the people tested by the antibody test. This means that the detection of SARS-CoV-2 specific antibodies does not exclude the infectiousness of the person tested. However, some studies suggest that SARS-CoV-2 specific antibodies can contribute to protective immunity.[20] According to the RKI, many people with a milder COVID-19 course and asymptomatic patients have developed an effective immune response (T-cell response). This could indicate that there is protection against severe COVID-19 disease. However, there is a lack of clear scientific evidence on this. The duration after a SARS-CoV-2 infection, in which measurable antibody titers are present, is currently unclear. Systematic studies that allow an assessment of the antibody titers associated with protection against reinfection or even recurrence of the disease are currently lacking.

Other testing methods

Several publications and projects indicate that there might be other relevant detection methods for SARS-CoV-2 infections in the future. Some very promising projects try to use artificial intelligence (AI) to detect patterns in coughs or breaths. Abnormalities should be identified and classified for different dia-gnosis. Whilst first and early data for sensitivity looks good, there might be several challenges with an adequate specificity (false positive results). For the use in future projects, many questions are still unanswered and the pathways to a medical certification have to be explored.

Think.Health Hygiene Solutions

[17] Wei, X., Liao, J., Li, C., Li, Y., Qian, X., Sun, X., Xu, H., Mahai, G., Zhao, X., Shi, L., et al. (2020). Transmission of corona virus disease 2019 during the incubation period may lead to a quarantine loophole. medRxiv.

[18] Long, Q.X., Liu, B.Z., Deng, H.J., Wu, G.C., Deng, K., Chen, Y.K., Liao, P., Qiu, J.F., Lin, Y., Cai, X.F., et al. (2020). Antibody responses to SARS-CoV-2 in patients with COVID-19. Nat Med 26, 845-848.

[19] https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Vorl_Testung_nCoV.html#doc13490982bodyText5

[20] Cao, Y., Su, B., Guo, X., Sun, W., Deng, Y., Bao, L., Zhu, Q., Zhang, X., Zheng, Y., Geng, C., et al. (2020). Potent Neutralizing Antibodies against SARS-CoV-2 Identified by High-Throughput Single-Cell Sequencing of Convalescent Patients' B Cells. Cell 182, 73-84 e16.

Annex 2
Exemplary Use of Testing – Adaptable Modules within Entrance Scenarios
Exemplary use of testing for single and multi-day festivals without camping ('highly digital')

Scenario 1.0
single day events / multi day events without camping

The following procedures are based on the application of a SARS-CoV-2 Rapid Antigen Test, with an analysis period of 15 minutes.

The visitors are strongly advised to wear face masks and to comply with the 1,5m distancing rule, until they arrive at the testing area. From there on, the wearing of face masks and the distancing rules are strictly mandatory, until the visitors received a negative test result and passed the security gates.

PUBLIC AREA

TESTING COUNTER

(1) Visitor walks to testing counter and shows ticket + ID. Testing personnel validates name on ticket and name on ID card.

(2) Ticket will be scanned. Automated print-out of a sticker with ticket QR code, name, time of testing, time slot for test result.

(3) Visitor gets tested. The sticker will be put on test. Testing personnel hands over the test to back office of testing station, where the test remains.

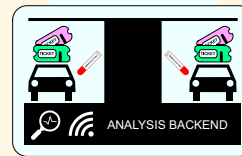(4) Visitor gets receipt with ticket QR code, name, testing time and time slot for test result.

ANALYSIS BACKEND

2min
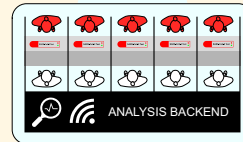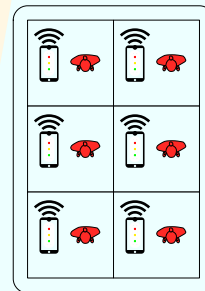
WAITING AREA

(5) Visitor is guided to waiting area.

(6) At the end of waiting time (15min), staff at backend scans the QR code on the test and analyzes the test result.

15min

(7) A message about further proceedings is transmitted to the visitor's mobile device.

If the test shows a negative result, the ticket will be unlocked in the system and the visitor receives a message on his mobile device, saying that the test result is negative and that the visitor can go to the ticket swap counter in order to enter the event.

If the test shows a positive or false result, the ticket will be locked in the system and the visitor receives a message on his mobile device, saying that the test has to be validated at the validation counter. Visitor goes to the validation counter, to run through a 2nd test run.
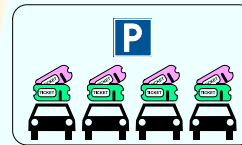
TICKET SWAP

TICKET SWAP

FESTIVAL SITE

TEST VALIDATION

Exemplary use of testing for multi-day festivals with camping, travelling by car

The following procedures are based on the application of a SARS-CoV-2 Rapid Antigen Test, with an analysis period of 15 minutes.

The visitors are strongly advised to wear face masks and to comply with the 1,5m distancing rule, until they arrive at the testing area. From there on, the wearing of face masks and the distancing rules are strictly mandatory, until the visitors received a negative test result and passed the security gates.

PUBLIC AREA

**TESTING
AT DRIVE IN TESTING STATION**

(1) Visitor drives to testing station, which is allocated within a 15 minutes driving distance from the event site.

(2) Testing personnel validates the name on ticket and the name on the visitor´s ID.

(3) Ticket is scanned. Automated print-out of a sticker with ticket QR code, name, time of testing, time slot for test result.

(4) Visitor gets tested. The sticker is put on test. Testing personnel hands over the test to back office of testing station, where the test remains.

(5) Visitor gets receipt with ticket QR code, name, testing time and time slot for test result.

ANALYSIS BACKEND

15min

FESTIVAL PARKING

(6) Visitor drives to the festival site, shows receipt and parking ticket to security staff at parking entrance in order to park the vehicle.

(7) At the end of waiting time (15min), staff at backend scans the QR code on the test and analyzes the test result.

(8) A message about further proceedings is transmitted to the visitor's mobile device.

If the test shows a negative result, the ticket will be unlocked in the system and the visitor receives a message on his mobile device, saying that the test result is negative and that the visitor can go to the ticket swap counter in order to enter the event.

If the test shows a positive or false result, the ticket will be locked in the system and the visitor receives a message on his mobile device, saying that the test has to be validated at the validation counter. Visitor goes to the validation counter, to run through a 2nd test run.

TICKET SWAP

**TICKET SWAP**

FESTIVAL SITE

TEST VALIDATION

Exemplary use of testing for multi-day festivals with camping, travelling by train

Scenario 3.0
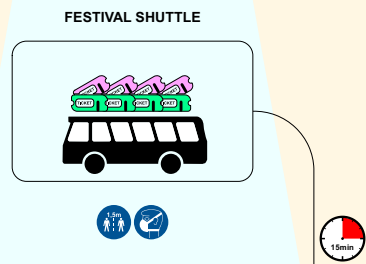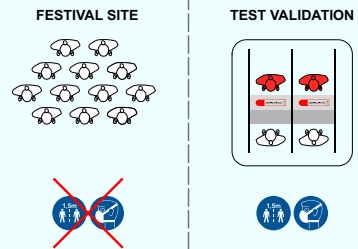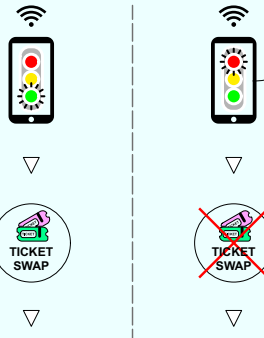### multi day events with camping / visitors travelling by train

The following procedures are based on the application of a SARS-CoV-2 Rapid Antigen Test, with an analysis period of 15 minutes.

The visitors are strongly advised to wear face masks and to comply with the 1,5m distancing rule, until they arrive at the testing area. From there on, the wearing of face masks and the distancing rules are strictly mandatory, until the visitors received a negative test result and passed the security gates.

PUBILC AREA

TESTING AT TRAIN STATION

(1) Visitor arrives at train station and walks to testing station in front of train station.

(2) Visitor shows ticket + ID. Testing personnel validates name on ticket and name on ID card.

(3) Ticket will be scanned. Automated print-out of a sticker with ticket QR code, name, time of testing, time slot for test result.

(4) Visitor gets tested. The sticker will be put on test. Testing personnel hands over the test to back office of testing station, where the test remains.

(5) Visitor gets receipt with ticket QR code, name, testing time and time slot for test result.

ANALYSIS BACKEND

2min
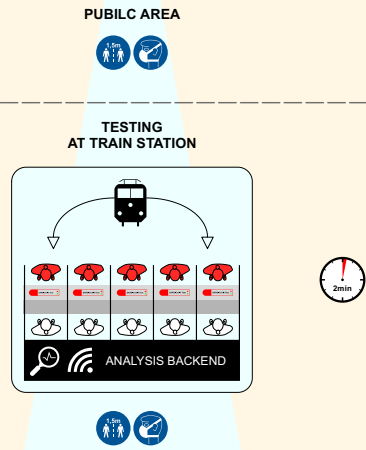
FESTIVAL SHUTTLE

(6) Visitor gets onto the shuttle bus, which takes 15 min to arrive at the bus station at festival site.

15min

(7) At the end of waiting time (15min), staff at backend scans the QR code on the test and analyzes the test result.

(8) A message about further proceedings is transmitted to the visitor's mobile device.

If the test shows a negative result, the ticket will be unlocked in the system and the visitor receives a message on his mobile device, saying that the test result is negative and that the visitor can go to the ticket swap counter in order to enter the event.

If the test shows a positive or false result, the ticket will be locked in the system and the visitor receives a message on his mobile device, saying that the test has to be validated at the validation counter. Visitor goes to the validation counter, to run through a 2nd test run.

TICKET SWAP

TICKET SWAP

FESTIVAL SITE

TEST VALIDATION

Exemplary use of daily testing for multi-day festivals with camping, during event phase

Scenario 4.0

multi day events with camping / daily testing during event phase

The following procedures are based on the application of a SARS-CoV-2 Rapid Antigen Test, with an analysis period of 15 minutes.
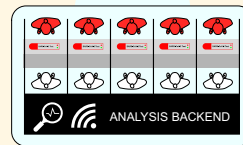
The visitors are strongly advised to wear face masks and to comply with the 1,5m distancing rule, until they arrive at the testing area. From there on, the wearing of face masks and the distancing rules are strictly mandatory, until the visitors received a negative test result and passed the security gates.

CAMPING AREA

TESTING COUNTER ON CAMPSITE

(1) Visitor walks to testing station on the way from the campsite to the festival infield.

(2) Testing personnel scans the RFID chip on visitor´s wristband. Automated print-out of a sticker with ticket QR code, name, time of testing, time slot for test result.

(3) Visitor gets tested. The sticker will be put on test. Testing personnel hands over the test to back office of testing station, where the test remains.

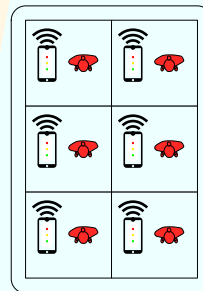(4) Visitor gets receipt with ticket QR code, name, testing time and time slot for test result.

ANALYSIS BACKEND

2min

WAITING AREA

(5) Visitor walks to the festival infield entrance gate (15 minutes walking distance).

15min

(6) A message about further proceedings is transmitted to the visitor's mobile device.

If the test a shows negative result, the daily entrance slot will be unlocked in the system and the visitor receives a message on his mobile device, saying that the test result is negative, and that the visitor has access to the festival infield, by scanning his RFID chip at the secured entrance gates.
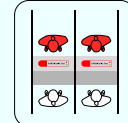
If the test shows a positive or false result, the account and the RFID chip will be locked in the system and the visitor receives a message on his mobile device, saying that the test has to be validated at the validation counter. Visitor goes to the validation counter, to run through a 2nd test run.

CHECK

CHECK

FESTIVAL SITE
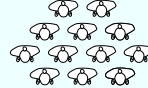
TEST VALIDATION

Annex 3
Exemplary Use of Testing – Rapid Testing Flowchart & Description

The described process is an example and based on the integration of a SARS-CoV-2 antigen rapid test within a festival ingress process. The test results are linked to the visitors account via an online tool. In order to achieve a flow rate of several thousand participants per hour, the evaluation phase would have to be separated from the testing phase.

Phase 1 – Testing
In this phase the ID check will be processed, and the actual antigen rapid test will be carried out. The person will be directed to a waiting area until he/she will be notified about the test result along with further instructions.

Phase 2 – Evaluation
The route between the testing station and the festival site can be used to bridge the evaluation phase, in order to prevent additional waiting time for the visitors. For this purpose, the testing station can be located at appropriate distance to the festival site. For testing in case of a re-entry, the distance between the camping area and the festival site can also be used by positioning the test station at the appropriate distance from the infield entrance. This avoids the need of additional waiting areas in front of the infield gates. Once the antigen rapid test has been evaluated in the backend of the testing station, the person receives a notification with the test result and further instructions. If the test result is negative, the person is invited to enter the festival. If the test result is positive or invalid, the access will be blocked within the system and the tested person is directed to the validation counter.

Phase 3 – Validation
This phase is only used for participants who have previously been tested positive or invalid in Phase 1. If the antigen rapid test in Phase 1 indicates a positive or invalid result, the result can be validated by a second test with a higher sensitivity than used in Phase 1.

SARS-CoV-2 Rapid-Testing @ Festivals
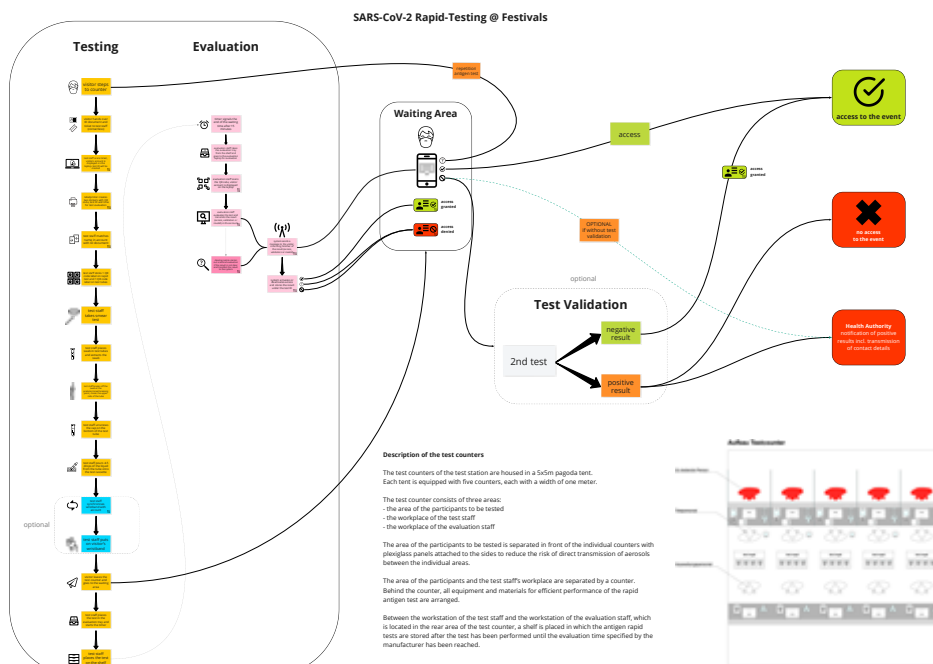
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