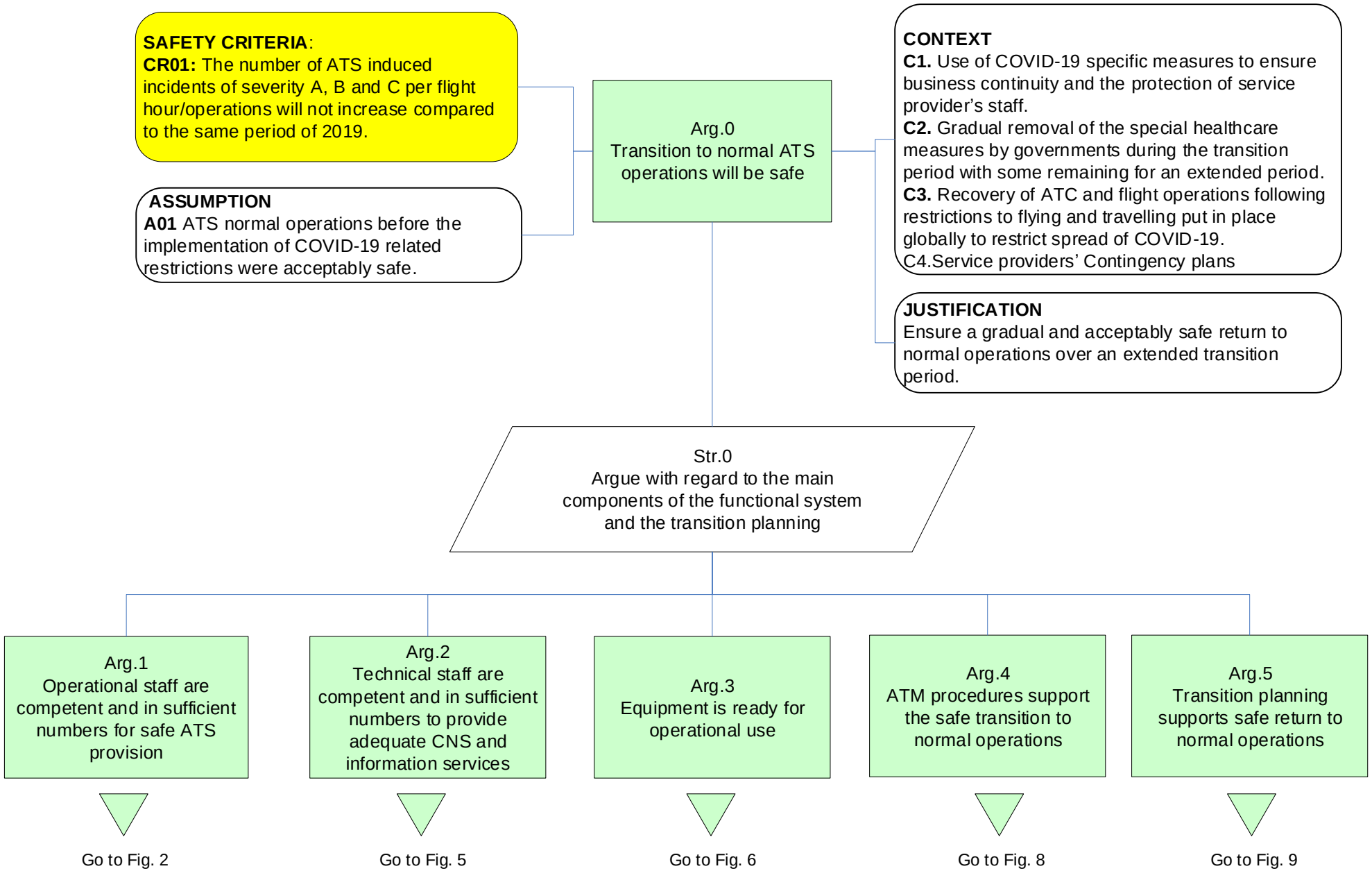
SAFETY CRITERIA:
CR01: The number of ATS induced incidents of severity A, B and C per flight hour/operations will not increase compared to the same period of 2019.
ASSUMPTION
A01 ATS normal operations before the implementation of COVID-19 related restrictions were acceptably safe.
Arg.0
Transition to normal ATS operations will be safe
CONTEXT
C1. Use of COVID-19 specific measures to ensure business continuity and the protection of service provider's staff.
C2. Gradual removal of the special healthcare measures by governments during the transition period with some remaining for an extended period.
C3. Recovery of ATC and flight operations following restrictions to flying and travelling put in place globally to restrict spread of COVID-19.
C4.Service providers' Contingency plans
JUSTIFICATION
Ensure a gradual and acceptably safe return to normal operations over an extended transition period.
Str.0
Argue with regard to the main components of the functional system and the transition planning
Arg.1
Operational staff are competent and in sufficient numbers for safe ATS provision
Arg.2
Technical staff are competent and in sufficient numbers to provide adequate CNS and information services
Arg.3
Equipment is ready for operational use
Arg.4
ATM procedures support the safe transition to normal operations
Arg.5
Transition planning supports safe return to normal operations
Go to Fig. 2
Go to Fig. 5
Go to Fig. 6
Go to Fig. 8
Go to Fig. 9

Figure 1

The basic claim of Argument 0 “Transition to normal ATS operations (following the COVID-19 lock down period) will be safe” is supported by:

- a safety criterion that defines what is considered ‘safe’, notably that the number of ATS induced incidents of severity A, B, C, E and D per flight hour (or per number of aircraft operations) will not increase compared to the same period of 2019 and by the associated assumption that ATS normal operations before the lock down period were acceptably safe.
- the 5 argument pillars that address the main components of the functional system of an ANSP and the arrangements and planning for the transition period.

The 5 argument pillars are:

- Operational staff (ATCOs, OPS supervisors and other staff, such as flow managers, flight data assistants, FISO, ASM/AMC staff, MET and AIS staff, as applicable) are competent and in sufficient numbers for safe ATS provision during the transition period.
- Technical staff (engineers, technicians, IT staff) are competent and in sufficient numbers to provide adequate CNS and information services.
- The ATM/CNS equipment (hardware and software) is ready for operational use.
- The ATM procedures support the safe transition to normal operations.
- The transition planning and arrangements support safe return to normal operations.

To demonstrate that the 5 arguments are true and valid, they have been decomposed further to the lower level where the evidence can be found.

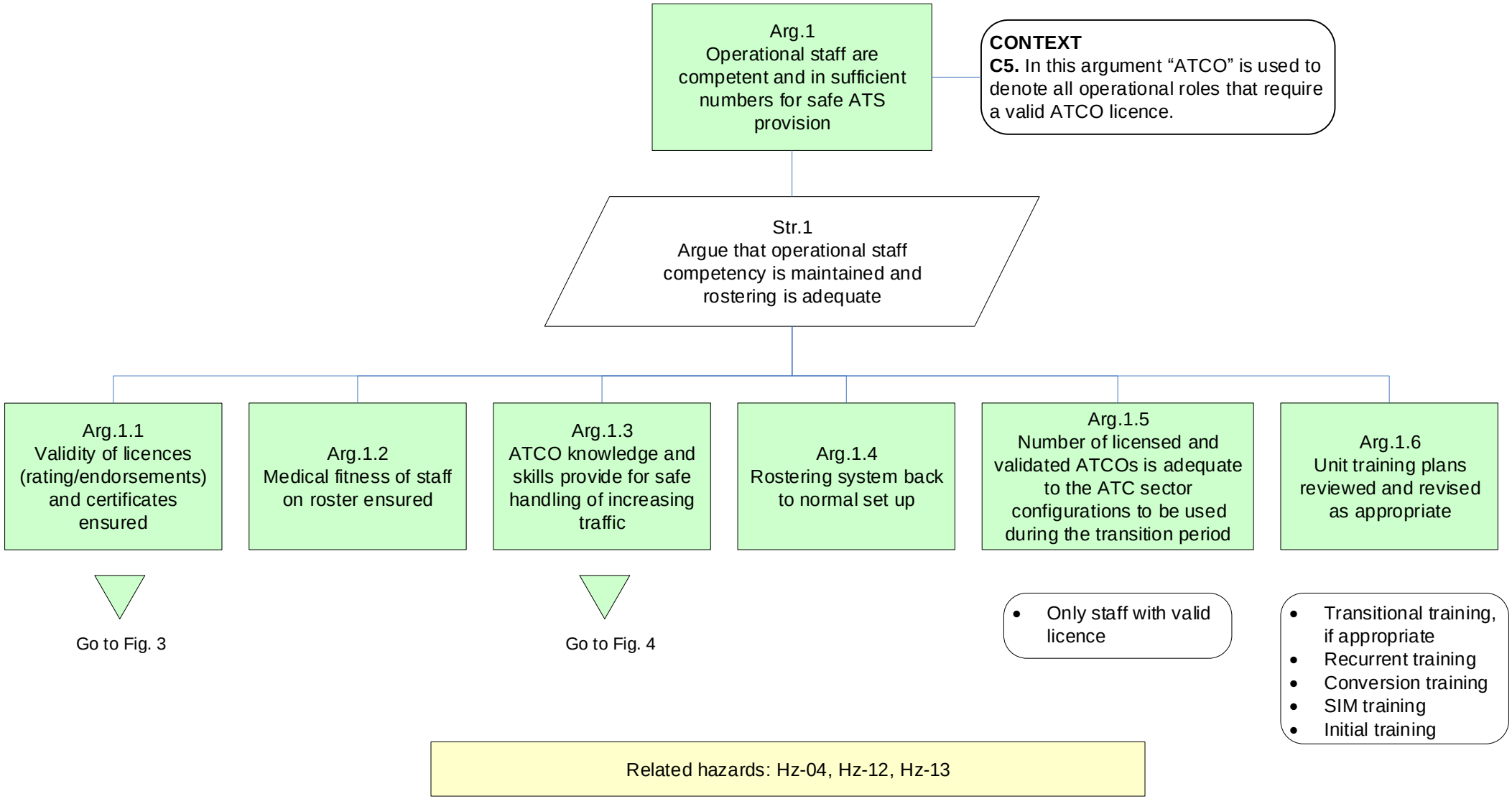
Arg.1
Operational staff are competent and in sufficient numbers for safe ATS provision
CONTEXT
C5. In this argument “ATCO” is used to denote all operational roles that require a valid ATCO licence.
Str.1
Argue that operational staff competency is maintained and rostering is adequate
Arg.1.1
Validity of licences (rating/endorsements) and certificates ensured
Arg.1.2
Medical fitness of staff on roster ensured
Arg.1.3
ATCO knowledge and skills provide for safe handling of increasing traffic
Arg.1.4
Rostering system back to normal set up
Arg.1.5
Number of licensed and validated ATCOs is adequate to the ATC sector configurations to be used during the transition period
Arg.1.6
Unit training plans reviewed and revised as appropriate
Go to Fig. 3
Go to Fig. 4
Only staff with valid licence
Transitional training, if appropriate
Recurrent training
Conversion training
SIM training
Initial training
Related hazards: Hz-04, Hz-12, Hz-13

Figure 2

To prove that Argument 1 “Operational staff (ATCOs, OPS supervisors and other staff, such as flow managers, flight data assistants, FISO, ASM/AMC staff, MET and AIS staff, as applicable) are competent and in sufficient numbers for safe ATS provision during the transition period” is true and valid, it has been decomposed into 6 sub-arguments:

- The validity of licences (rating/endorsements) and certificates of the operational staff is ensured. To prove that this compliance argument is true it has been decomposed further.
- The medical fitness of operational staff on roster is ensured. This argument can be supported by: regular staff health checks, promotion of and compliance with the COVID-19 general hygienic measures and availability of cleaning hands points in the buildings. Psychological fitness could be supported by: provision of psychological help, CISM sessions, peer-to-peer platforms, mentoring.
- ATCO knowledge and skills provide for safe handling of increasing traffic. To prove that this argument is true it has been decomposed further.
- The ATCO rostering system is back to normal set up, i.e. the normal rostering of operational staff to fixed shifts and/or flexible shifts and/or individual (monthly) rostering plans is being applied. The necessary changes to the rostering tool parameters have been made.
- The number of licensed and validated ATCOs is adequate to the ATC sector configurations to be used during the transition period. This ensures sufficient number of ATCOs with valid licence to man the ATC sectors needed to be opened during any 24-hour period.
- Unit training plans (UTP) reviewed and revised as appropriate, which will ensure sufficient number of licensed ATCO in the long run (even beyond an extended transition period). The UTP update should cover all phases of ATCO training - initial training, transitional training, simulator training, conversion training, recurrent training, as appropriate.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-04: Insufficient number of operational staff to meet the increasing demand in the transition period and beyond it.
- Hz-12: Inadequate ATCO on-the-job training.
- Hz-13: Increased stress for operational and technical staff.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

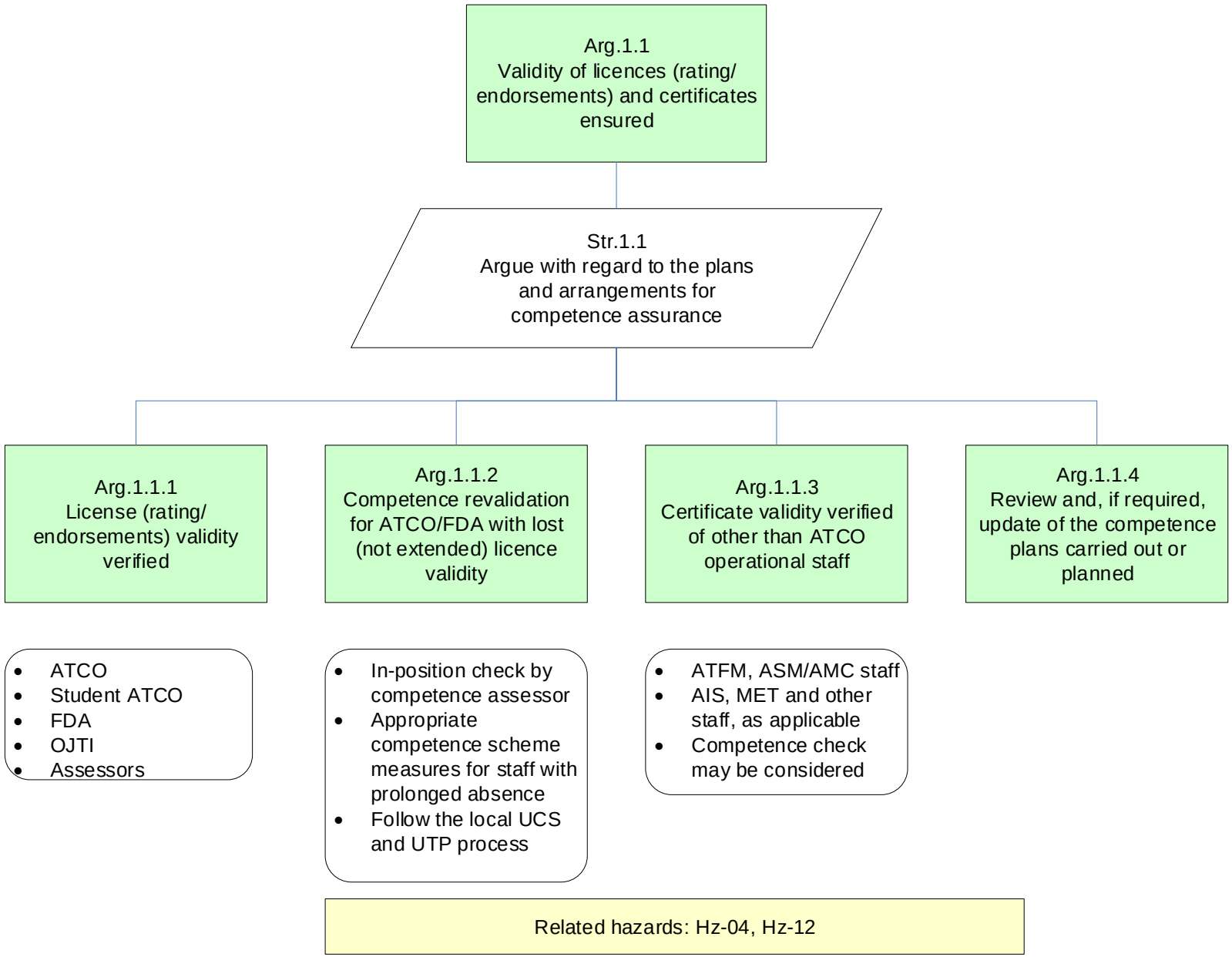
Arg.1.1
Validity of licences (rating/ endorsements) and certificates ensured
Str.1.1
Argue with regard to the plans and arrangements for competence assurance
Arg.1.1.1
License (rating/ endorsements) validity verified
Arg.1.1.2
Competence revalidation for ATCO/FDA with lost (not extended) licence validity
Arg.1.1.3
Certificate validity verified of other than ATCO operational staff
Arg.1.1.4
Review and, if required, update of the competence plans carried out or planned
ATCO
Student ATCO
FDA
OJTI
Assessors
In-position check by competence assessor
Appropriate competence scheme measures for staff with prolonged absence
Follow the local UCS and UTP process
ATFM, ASM/AMC staff
AIS, MET and other staff, as applicable
Competence check may be considered
Related hazards: Hz-04, Hz-12

Figure 3

To prove that the compliance Argument 1.1 “The validity of licences (rating/endorsements) and certificates of the operational staff is ensured” it true and valid, it has been decomposed into 4 sub-arguments:

- The licence (rating/endorsements) validity of ATCOs verified. This includes all operational roles that require a valid ATCO licence, such as ATCOs, trainee ATCOs, operational supervisors, OJTI, competence assessors, flight data assistants, flow managers, etc.).
- Competence revalidation for ATCO/FDA with lost (not extended) licence validity due to prolonged absence (e.g. sickness, leave). The revalidation should be carried out in compliance with the ANSP competence scheme. Local UCS and UTP process should be followed. Appropriate measures could include in-position check by competence assessor.
- Certificate validity verified of other than ATCO operational staff (e.g. FISO, ASM/AMC staff, MET and AIS staff, as applicable). Competence checks may be planned and carried out.
- A review and, if required, update of the staff competence plans is planned or has been carried to ensure that the required new or additional operational staff competency is planned to be acquired according to the operational needs.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-04: Insufficient number of operational staff to meet the increasing demand in the transition period and beyond it.
- Hz-12: Inadequate ATCO on-the-job training.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

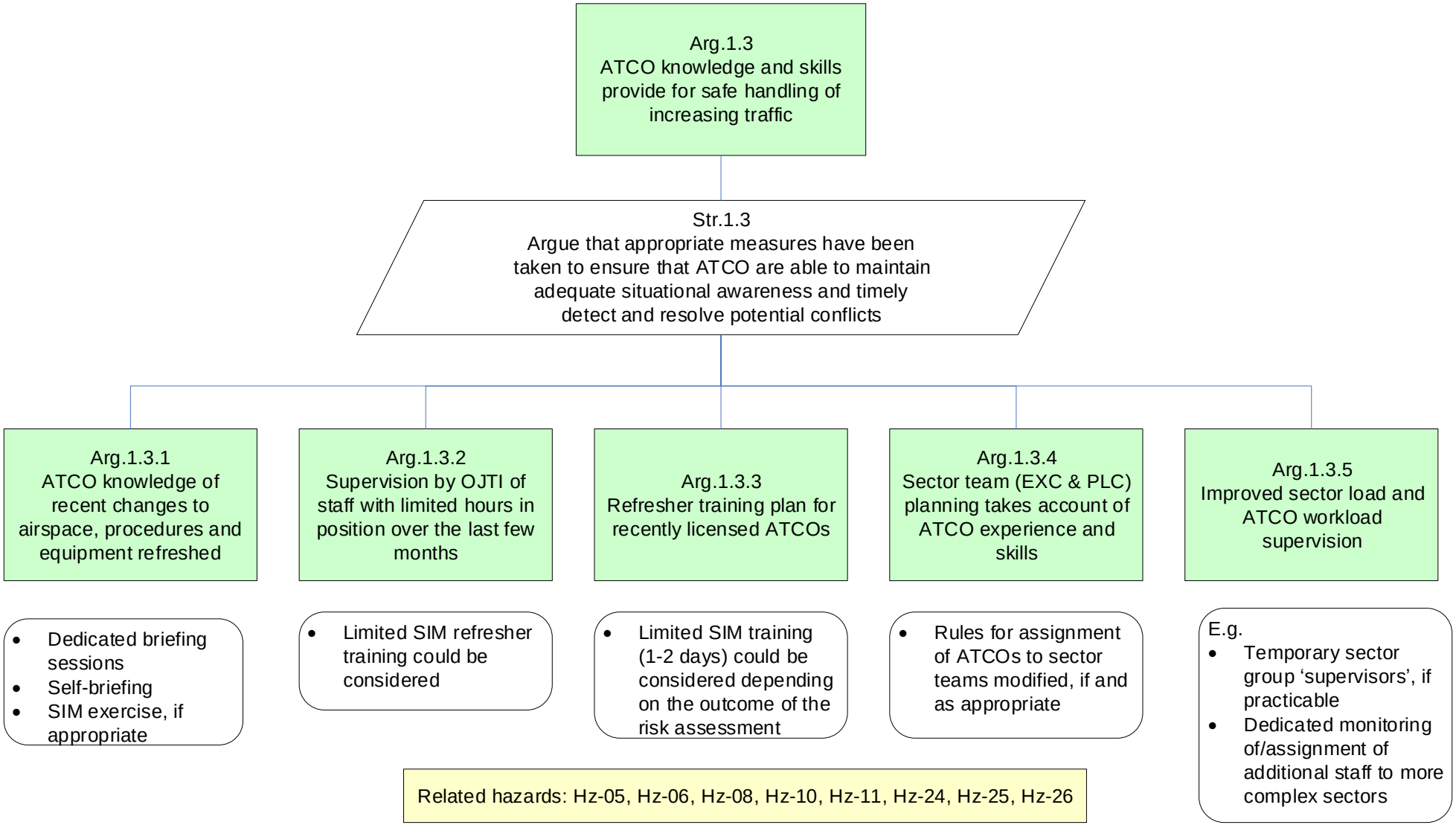
Arg.1.3
ATCO knowledge and skills provide for safe handling of increasing traffic
Str.1.3
Argue that appropriate measures have been taken to ensure that ATCO are able to maintain adequate situational awareness and timely detect and resolve potential conflicts
Arg.1.3.1
ATCO knowledge of recent changes to airspace, procedures and equipment refreshed
Arg.1.3.2
Supervision by OJTI of staff with limited hours in position over the last few months
Arg.1.3.3
Refresher training plan for recently licensed ATCOs
Arg.1.3.4
Sector team (EXC & PLC) planning takes account of ATCO experience and skills
Arg.1.3.5
Improved sector load and ATCO workload supervision
• Dedicated briefing sessions
• Self-briefing
• SIM exercise, if appropriate
• Limited SIM refresher training could be considered
• Limited SIM training (1-2 days) could be considered depending on the outcome of the risk assessment
• Rules for assignment of ATCOs to sector teams modified, if and as appropriate
E.g.
• Temporary sector group 'supervisors', if practicable
• Dedicated monitoring of/assignment of additional staff to more complex sectors
Related hazards: Hz-05, Hz-06, Hz-08, Hz-10, Hz-11, Hz-24, Hz-25, Hz-26

Figure 4

To prove that the Argument 1.3 “ATCO knowledge and skills provide for safe handling of increasing traffic” it true and valid, it has been decomposed into 5 sub-arguments:

- The ATCO knowledge of recent changes to airspace, procedures and equipment is refreshed. This can be supported by: organising dedicated briefing sessions, creating online self-briefing modules, dedicated simulator exercises for more complex changes.
- Supervision by OJTI of staff with limited hours in position over the last few months of confinement. In some cases limited simulator refresher training could be considered.
- Refresher training plan for recently licensed ATCOs (ATCOs that have been licenced short before the lock down). The scope and duration of the plan (e.g. simulator training of a few days) should be set according to the outcome of a dedicated risk assessment.
- Sector team (EXC & PLC) planning shall take account of ATCO experience and skills. The existing (before and during the confinement period) rules for assignment of ATCOs to sector teams may need to be modified taking into account ATCO experience, skills, hours in position over the last few months.
- Improved sector load and ATCO workload supervision will help prevent ATCO working at or beyond their current limits. Possible measure could include: temporary assignment of sector group ‘supervisors’ (if practicable), dedicated monitoring of and/or assignment of additional staff to more complex sectors, lowering the maximum thresholds of sector monitoring values until skills’ recovery and other ATFCM measures.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-05: ATCO unable to maintain full situational awareness for timely conflict detection and resolution in the entire area of responsibility, in particular in traffic spike periods.
- Hz-06: ATCO overload and fatigue.
- Hz-08: Inadequate inter-sector and inter-unit operational coordination.
- Hz-10: ATCO/OPS supervisors’ confusion about applicable airspace organisation and/or rules/procedures during the transition period.
- Hz-11: Supervisors (ATCO and ATSEP) with reduced competence in handling situations due to the long lean traffic periods.
- Hz-24: Reduced terrain and obstacle clearance limits.
- Hz-25: Improper handling of emergencies by all involved parties.
- Hz-26: Inadequate alerting service.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

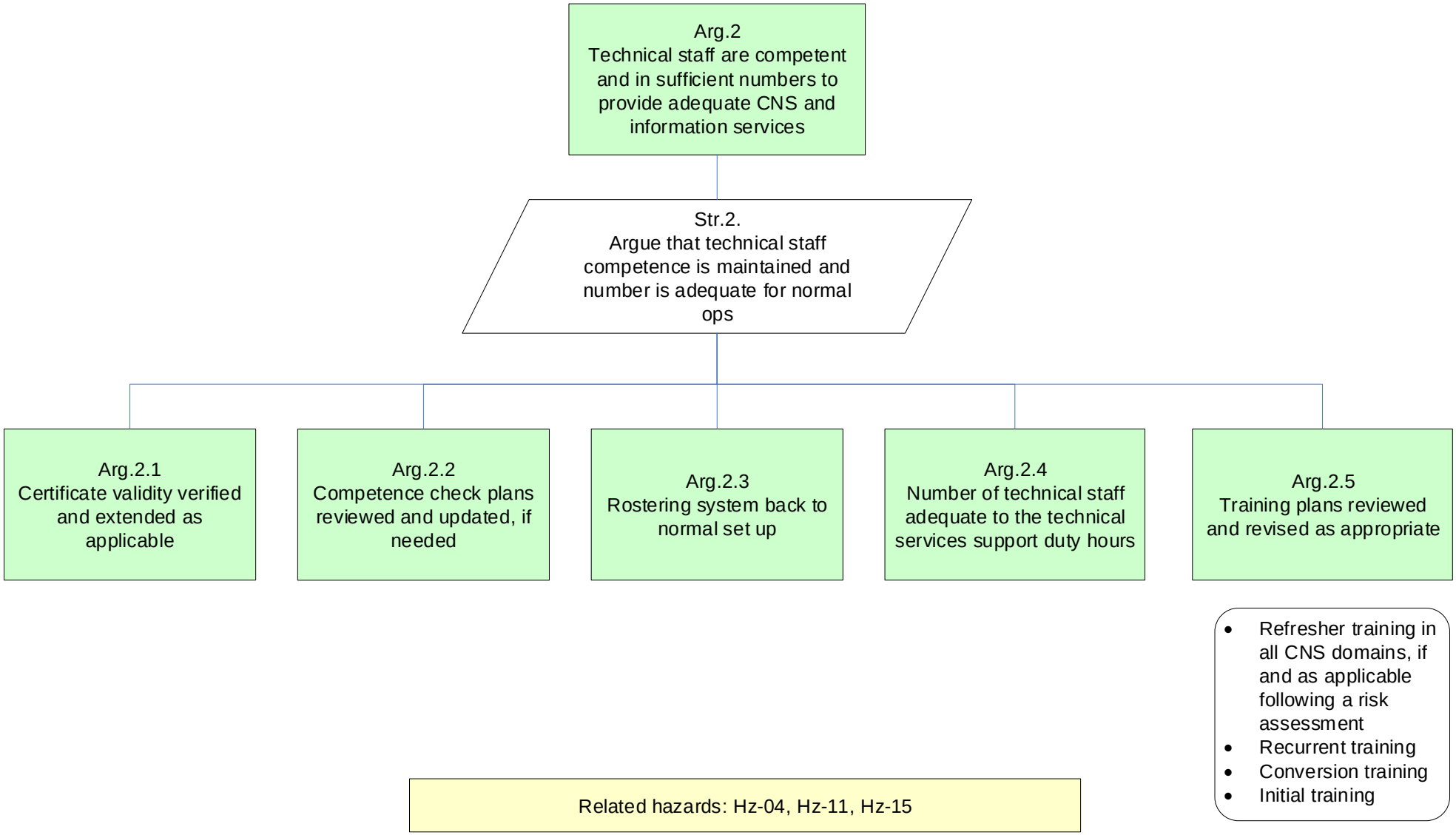
Arg.2
Technical staff are competent and in sufficient numbers to provide adequate CNS and information services
Str.2.
Argue that technical staff competence is maintained and number is adequate for normal ops
Arg.2.1
Certificate validity verified and extended as applicable
Arg.2.2
Competence check plans reviewed and updated, if needed
Arg.2.3
Rostering system back to normal set up
Arg.2.4
Number of technical staff adequate to the technical services support duty hours
Arg.2.5
Training plans reviewed and revised as appropriate
Refresher training in all CNS domains, if and as applicable following a risk assessment
Recurrent training
Conversion training
Initial training
Related hazards: Hz-04, Hz-11, Hz-15

Figure 5

To prove that the compliance Argument 2 “Technical staff are competent and in sufficient numbers to provide adequate CNS and information services” is true and valid, it has been decomposed into 5 sub-arguments:

- The validity of ATSEP (engineers, technicians, IT specialists) certificates involved in the provision of CNS and information services has verified and extended as applicable. Coordination with the CA may be necessary.
- The technical staff competence check plans reviewed and updated, if needed. (Due to the confinement measures the competence checks planned to be carried out during the confinement period may have been postponed.)
- The rostering system is back to normal set up, i.e. the normal rostering of technical staff to e.g. fixed shifts and/or stand-by duties and/or ‘office hours’ is being applied.
- The number of technical staff is adequate to the technical services support duty hours. This provides for availability of sufficient number of technical staff for on site and remote equipment maintenance and interventions (planned and unplanned) during any 24-hour period.
- Technical staff training plans reviewed and revised as appropriate, which will ensure sufficient number of certified ATSEP in the long run (even beyond an extended transition period). The training plan update should cover all phases of ATSEP training - initial training, conversion training, recurrent training. Refresher training in all CNS domains may be planned and provided following a risk assessment of the impact of the confinement period on ATSEP skills.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-04: Insufficient number of operational staff to meet the increasing demand in the transition period and beyond it.
- Hz-11: Supervisors (ATCO and ATSEP) with reduced competence in handling situations due to the long lean traffic periods.
- Hz-15: Increased equipment failure rates and compromised equipment maintenance.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

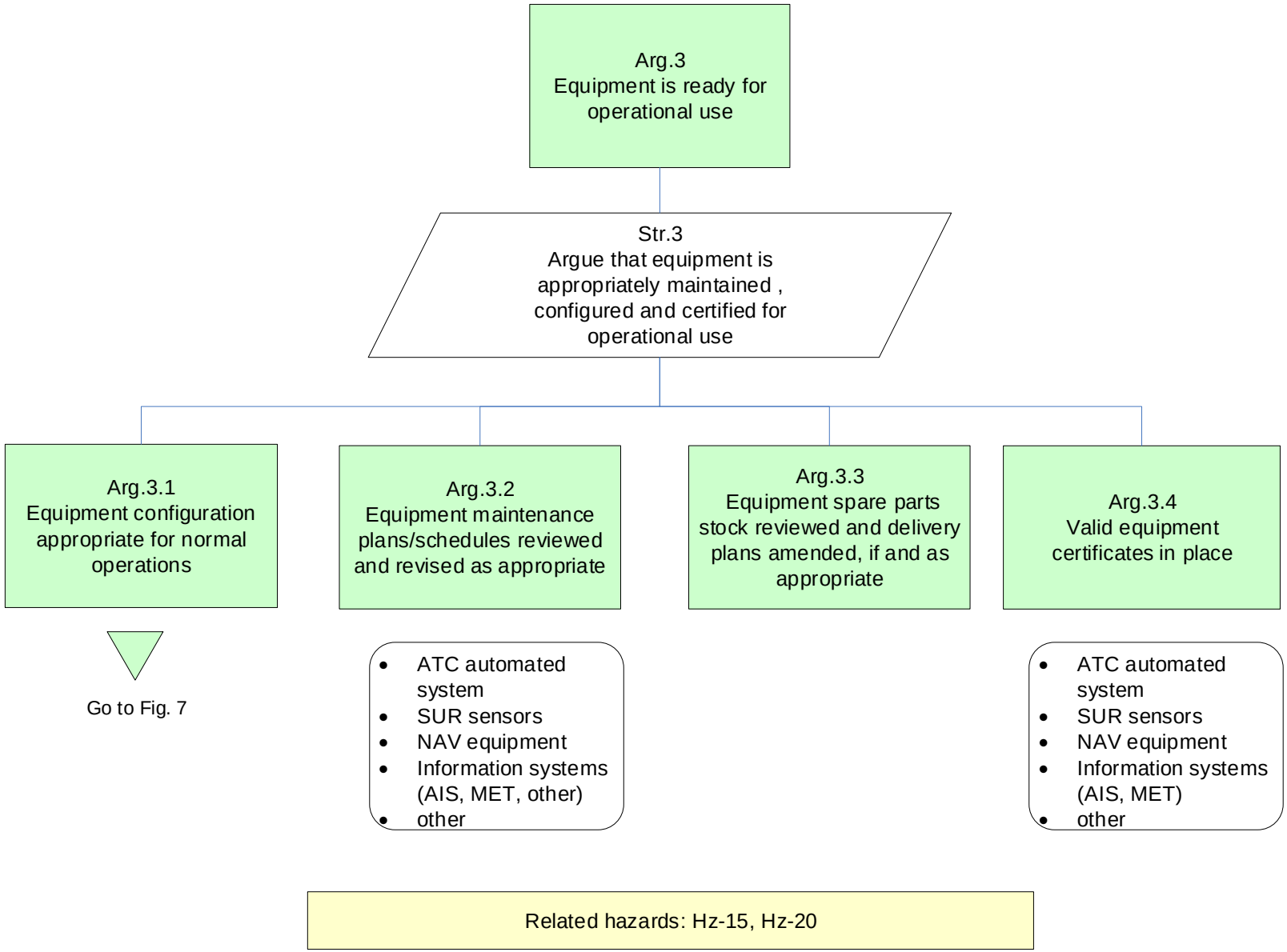
Arg.3
Equipment is ready for operational use
Str.3
Argue that equipment is appropriately maintained , configured and certified for operational use
Arg.3.1
Equipment configuration appropriate for normal operations
Go to Fig. 7
Arg.3.2
Equipment maintenance plans/schedules reviewed and revised as appropriate
ATC automated system
SUR sensors
NAV equipment
Information systems (AIS, MET, other)
other
Arg.3.3
Equipment spare parts stock reviewed and delivery plans amended, if and as appropriate
Arg.3.4
Valid equipment certificates in place
ATC automated system
SUR sensors
NAV equipment
Information systems (AIS, MET)
other
Related hazards: Hz-15, Hz-20

Figure 6

To prove that Argument 3 “The ATM/CNS equipment (hardware and software) is ready for operational use” is true and valid, it has been decomposed into 4 sub-arguments:

- The equipment configuration is appropriate for normal operations. To prove that this argument is true it has been decomposed further.
- Equipment maintenance plans and schedules reviewed and revised as appropriate. The scope should include all ATM/CNS equipment, such as ATC automated system, surveillance sensors, navigation equipment (e.g. NAVAIDS), information systems (AIS, MET, other).
- Equipment spare parts stock reviewed and delivery plans amended, if and as appropriate. (Planned delivery of spare parts may have been delayed or cancelled due to the closure of factories and state borders and restrictions to flights.)
- ATM/CNS equipment has valid certificates for use. This compliance argument ensures that operational performance of the ATM/CNS equipment meets the regulatory and operational requirements. Where flight inspections are needed (in particular for NAVIDS) health safety protocol to protect ground and on-board staff should be agreed. Timely communication and coordination with the CA will prevent delays in certificate renewals, where applicable.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-15: Increased equipment failure rates and compromised equipment maintenance.
- Hz-20: Delayed certification of particular services or equipment and delayed implementation of changes that need prior CA approval.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

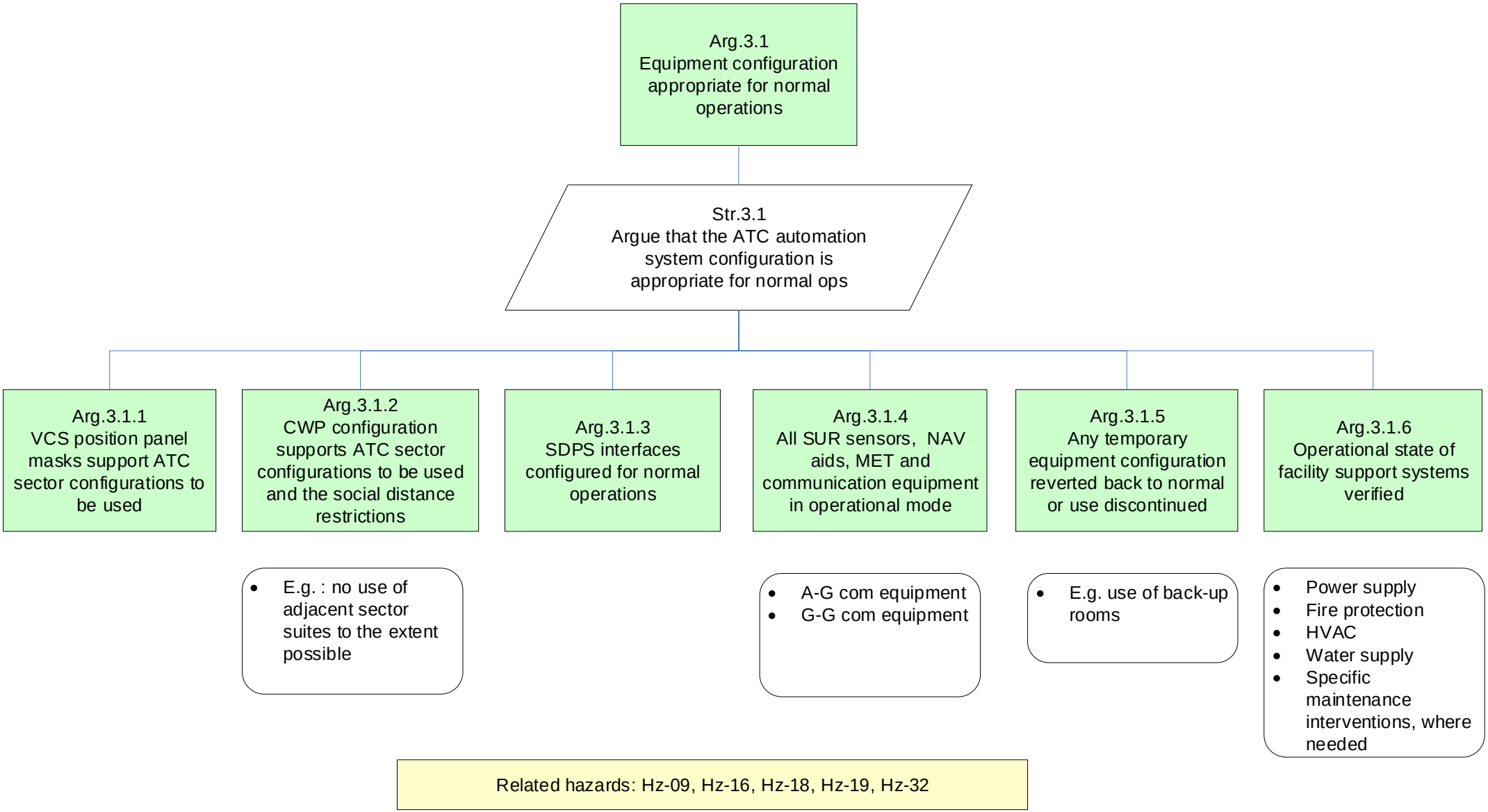
Arg.3.1
Equipment configuration appropriate for normal operations
Str.3.1
Argue that the ATC automation system configuration is appropriate for normal ops
Arg.3.1.1
VCS position panel masks support ATC sector configurations to be used
Arg.3.1.2
CWP configuration supports ATC sector configurations to be used and the social distance restrictions
Arg.3.1.3
SDPS interfaces configured for normal operations
Arg.3.1.4
All SUR sensors, NAV aids, MET and communication equipment in operational mode
Arg.3.1.5
Any temporary equipment configuration reverted back to normal or use discontinued
Arg.3.1.6
Operational state of facility support systems verified
E.g. : no use of adjacent sector suites to the extent possible
A-G com equipment
G-G com equipment
E.g. use of back-up rooms
Power supply
Fire protection
HVAC
Water supply
Specific maintenance interventions, where needed
Related hazards: Hz-09, Hz-16, Hz-18, Hz-19, Hz-32

Figure 7

To prove that Argument 3.1 “The equipment configuration is appropriate for normal operations” is true and valid, it has been decomposed into 6 sub-arguments:

- The VCS position panel masks at CWPs support ATC sector configurations to be used. The ATC sector configuration that have been planned for use by a particular ATSU during the traffic recovery period may be different form the ‘standard’ ones used before the crises and during the COVID-19 lock down period.
- CWP configuration in the OPS room supports ATC sector configurations to be used and the social distance requirements. The argument could be supported by avoiding the use adjacent sector suites/positions, where feasible.
- Surveillance data processing system (SDPS) interfaces are configured for normal operations. This means that the SDPS interfaces to all surveillance sensors are in operational mode. (Some sensors may have been disconnected and taken out of service during the COVID-19 lock down period due to the serious reduction of the number of flights and the limited use of airspace.)
- All surveillance sensors, navigation aids, air-ground and ground-ground communication equipment is in operational mode. (Some surveillance sensors and/or other ATM/CNS equipment may have been taken out of service during the COVID-19 lock down period due to the serious reduction of the number of flights and the limited use of airspace and the maintenance issues related to staff health protection.)
- Any temporary equipment configuration reverted back to normal or its operational use discontinued. Some ANSP may have used back up facilities (e.g. technical or operational rooms and/or equipment) during the COVID-19 lock down period.
- Operational state of facility support systems verified. This includes verification of the operational state and, where necessary, specific maintenance interventions on the main ATSU facility support systems such as: power supply system, building management system, HVAC, fire protection system, water supply, etc.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-09: Impeded ATC sector team (EXC-PLC) collaboration.
- Hz-16: Insufficient operational equipment resources (e.g. CWPs) at the ATS unit.
- Hz-18: Lack of or reduced contracted services and maintenance/supplier support.
- Hz-19: Operational performance/parameters of NAVAIDS (e.g. ILS) not to the required standard.
- Hz-32: Partial loss or misunderstanding of air-ground communication.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

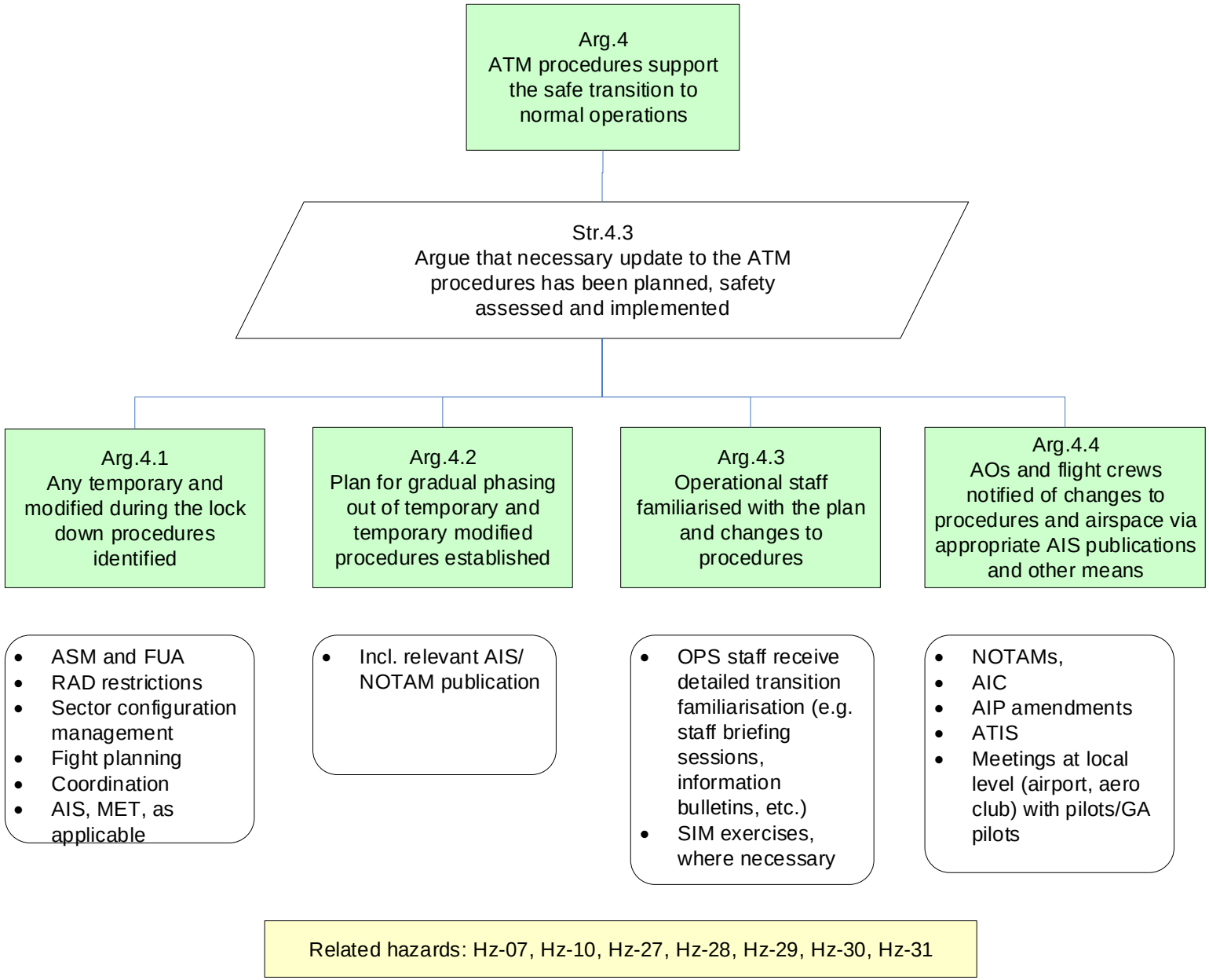
Arg.4
ATM procedures support the safe transition to normal operations
Str.4.3
Argue that necessary update to the ATM procedures has been planned, safety assessed and implemented
Arg.4.1
Any temporary and modified during the lock down procedures identified
Arg.4.2
Plan for gradual phasing out of temporary and temporary modified procedures established
Arg.4.3
Operational staff familiarised with the plan and changes to procedures
Arg.4.4
AOs and flight crews notified of changes to procedures and airspace via appropriate AIS publications and other means
ASM and FUA
RAD restrictions
Sector configuration management
Fight planning
Coordination
AIS, MET, as applicable
Incl. relevant AIS/ NOTAM publication
OPS staff receive detailed transition familiarisation (e.g. staff briefing sessions, information bulletins, etc.)
SIM exercises, where necessary
NOTAMs,
AIC
AIP amendments
ATIS
Meetings at local level (airport, aero club) with pilots/GA pilots
Related hazards: Hz-07, Hz-10, Hz-27, Hz-28, Hz-29, Hz-30, Hz-31

Figure 8

To prove that Argument 4 “ATM procedures support the safe transition to normal operations” is true and valid, it has been decomposed into 4 sub-arguments:

- Any temporary and modified during the lock down procedures have been identified. Such procedures, implemented to ensure the business continuity during the COVID-19 lockdown may concern the following domains: airspace design - RAD restrictions, airspace management and FUA, ATC sector configuration management, fight planning, ATC coordination, AIS MET provision.
- A plan for gradual phasing out of temporary and temporary modified procedures has been established. Beside the list of procedures and the phase-out schedule, the plan should include the communication to the ANSP operational staff and the concerned aviation undertakings (e.g. AOs, CFSPs).
- Operational staff familiarised with the plan and changes to procedures. Operational staff should receive detailed familiarisation with changes planned during the period of transition to normal operations. Possible means include dedicated staff briefing sessions, information bulletins, online self-briefing modules, dedicated simulator exercises for more complex changes.
- Aircraft operators and flight crews notified of the planned changes to procedures and airspace via appropriate AIS publications. Different means may be used, as appropriate, for notification: NOTAMs, AICs, AIP amendments, ATIS, meetings at local level (airport, aero club) with aircraft operators, commercial pilots and GA pilots.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-07: Significant increase in ATC workload to handle flights suffering technical or medical issues, VFR and training flights.
- Hz-10: ATCO/OPS supervisors’ confusion about applicable airspace organisation and/or rules/procedures during the transition period.
- Hz-27: Confusing aeronautical information regarding availability of network and airport resources.
- Hz-28: Inadequate aeronautical information regarding usual airspace design evolution.
- Hz-29: Flight plan inconsistent with applicable airspace, route or airport availability and conditions
- Hz-30: Increased number of airspace infringements by GA pilots
- Hz-31: Incorrect aircraft navigation.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

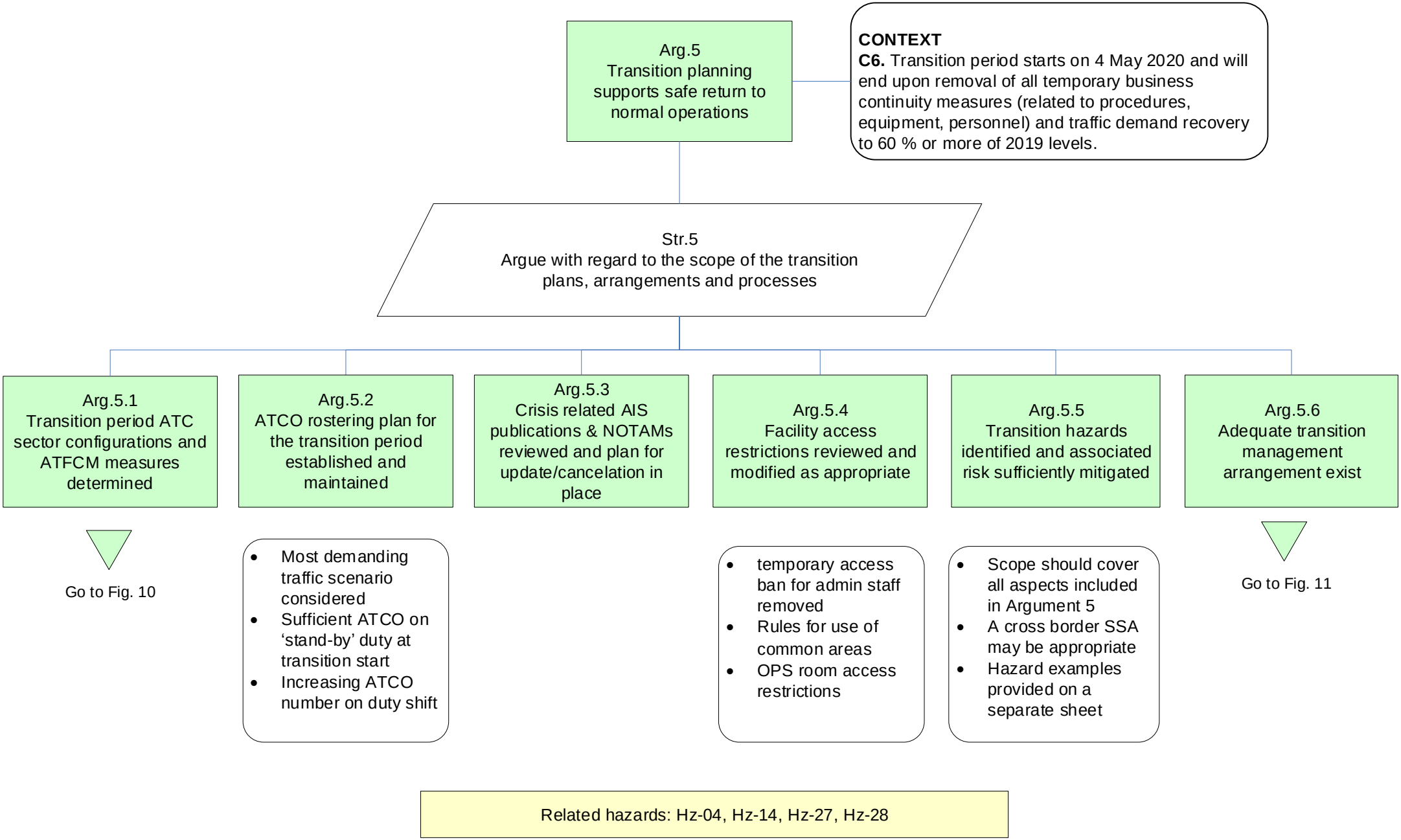
Arg.5
Transition planning supports safe return to normal operations
CONTEXT
C6. Transition period starts on 4 May 2020 and will end upon removal of all temporary business continuity measures (related to procedures, equipment, personnel) and traffic demand recovery to 60 % or more of 2019 levels.
Str.5
Argue with regard to the scope of the transition plans, arrangements and processes
Arg.5.1
Transition period ATC sector configurations and ATFCM measures determined
Arg.5.2
ATCO rostering plan for the transition period established and maintained
Arg.5.3
Crisis related AIS publications & NOTAMs reviewed and plan for update/cancelation in place
Arg.5.4
Facility access restrictions reviewed and modified as appropriate
Arg.5.5
Transition hazards identified and associated risk sufficiently mitigated
Arg.5.6
Adequate transition management arrangement exist
Go to Fig. 10
Most demanding traffic scenario considered
Sufficient ATCO on 'stand-by' duty at transition start
Increasing ATCO number on duty shift
temporary access ban for admin staff removed
Rules for use of common areas
OPS room access restrictions
Scope should cover all aspects included in Argument 5
A cross border SSA may be appropriate
Hazard examples provided on a separate sheet
Go to Fig. 11
Related hazards: Hz-04, Hz-14, Hz-27, Hz-28

Figure 9

To prove that Argument 5 “Transition planning supports safe return to normal operations” is true and valid, it has been decomposed into 6 sub-arguments:

- Transition period ATC sector configurations and ATFCM measures determined. To prove that this argument is true it has been decomposed further.
- ATCO rostering plan for the transition period established and maintained (updated as necessary). The following aspects should be considered when establishing the rostering plan: most demanding traffic outlook scenario, planning for sufficient ATCO on ‘stand-by’ duty at transition start, increasing the number ATCOs on duty shift in line with growth in traffic demand.
- Crisis related AIS publications & NOTAMs reviewed and plan for update/cancelation in place. Similarly to the notification of the changes to the ATM procedures, most appropriate combination of notification means (NOTAMs, AICs, AIP amendments, ATIS, meetings at local level (airport, aero club)) should be used to ensure airspace users and other concerned aviation undertakings are aware of the changes to the aeronautical publications related to the COVID-19 lock down.
- Facility access restrictions reviewed and modified as appropriate. This should include, as appropriate, removing the temporary access ban for non-essential (e.g. administrative) staff, establishing rules for use of common areas (e.g. recreation rooms), which should prevent spread of COVID-19 infection, modification to the OPS room access restrictions, if appropriate.
- Transition hazards identified and associated risk sufficiently mitigated. The scope of the safety assessment should cover all aspects included in this argument. A cross border safety assessment (safety support assessment) may be Appropriate to identify hazards at ATSU interfaces to adjacent ATSUs. Transition hazard examples related to the scope of the safety arguments have been included in this safety argument checklist.
- Adequate transition management arrangement exist. To prove that this argument is true it has been decomposed further.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-04: Insufficient number of operational staff to meet the increasing demand in the transition period and beyond it.
- Hz-14: Lower quality or delay of safety deliverables (investigation reports, safety assessments, safety analysis, safety reports).
- Hz-27: Confusing aeronautical information regarding availability of network and airport resources.
- Hz-28: Inadequate aeronautical information regarding usual airspace design evolution

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

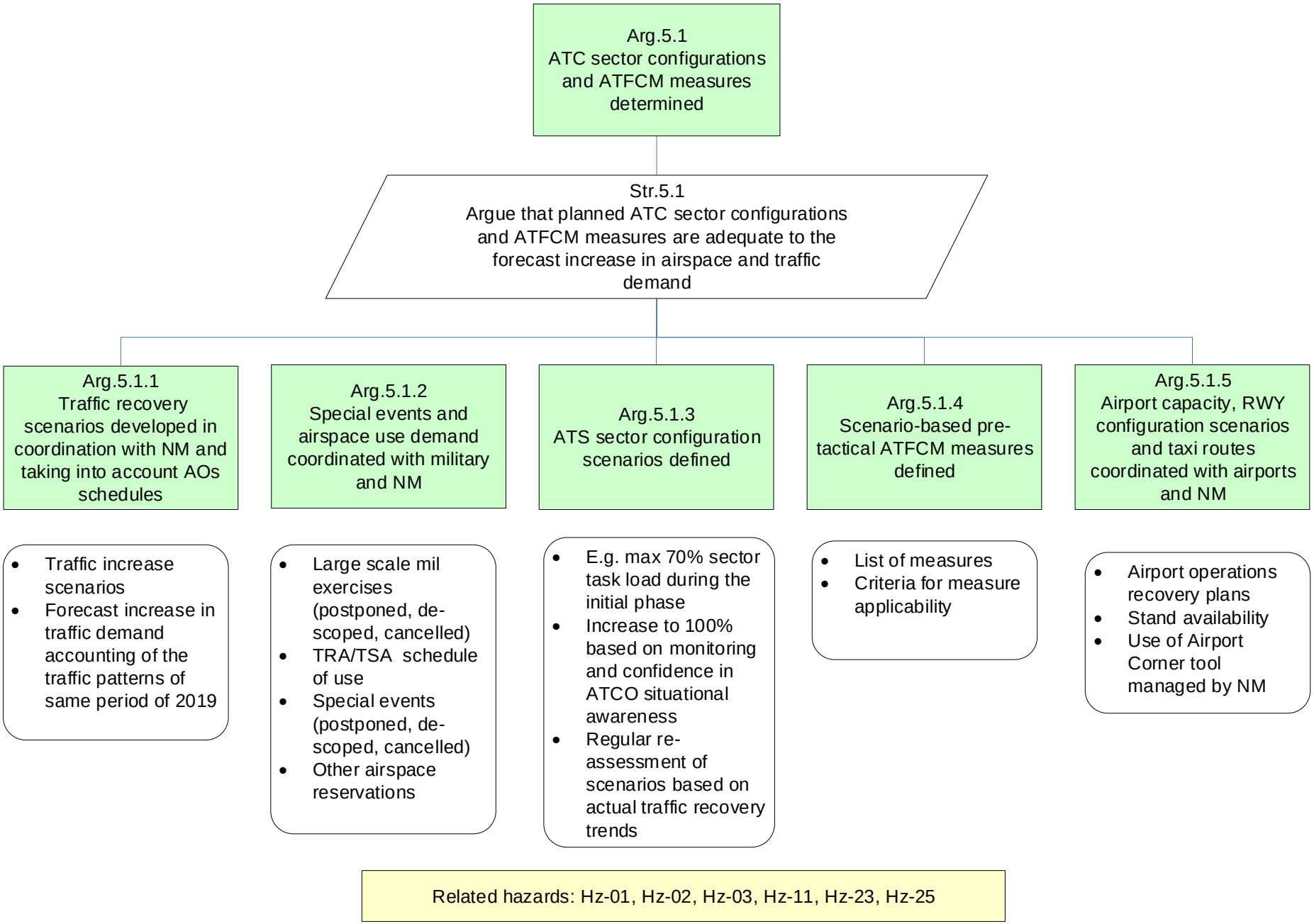
Arg.5.1
ATC sector configurations and ATFCM measures determined
Str.5.1
Argue that planned ATC sector configurations and ATFCM measures are adequate to the forecast increase in airspace and traffic demand
Arg.5.1.1
Traffic recovery scenarios developed in coordination with NM and taking into account AOs schedules
Arg.5.1.2
Special events and airspace use demand coordinated with military and NM
Arg.5.1.3
ATS sector configuration scenarios defined
Arg.5.1.4
Scenario-based pre-tactical ATFCM measures defined
Arg.5.1.5
Airport capacity, RWY configuration scenarios and taxi routes coordinated with airports and NM
Traffic increase scenarios
Forecast increase in traffic demand accounting of the traffic patterns of same period of 2019
Large scale mil exercises (postponed, de-scoped, cancelled)
TRA/TSA schedule of use
Special events (postponed, de-scoped, cancelled)
Other airspace reservations
E.g. max 70% sector task load during the initial phase
Increase to 100% based on monitoring and confidence in ATCO situational awareness
Regular re-assessment of scenarios based on actual traffic recovery trends
List of measures
Criteria for measure applicability
Airport operations recovery plans
Stand availability
Use of Airport Corner tool managed by NM
Related hazards: Hz-01, Hz-02, Hz-03, Hz-11, Hz-23, Hz-25

Figure 10

To prove that Argument 5.1 “ATC sector configurations and ATFCM measures (to be used during the recovery period) determined” is true and valid, it has been decomposed into 5 sub-arguments:

- Traffic recovery scenarios developed in coordination with the NM and taking into account AOs schedules. The increase in traffic demand should be based on similar traffic patterns of the same period of 2019. Consistency with the European NOP 2020 recovery plan should be ensured.
- Special events and airspace use demand coordinated with military and the NM. The scope of the coordination activities should include large scale military exercises, TRA/TSA schedule of use, special events or other airspace reservations. To alleviate impact on the commercial flights and ATCO workload during the initial recovery period such special events and military exercises could be postponed, de-scoped or even cancelled.
- ATS sector configuration scenarios defined. It is assumed that when defining the sector configurations based on traffic outlook demand, the maximum thresholds of the sector monitoring values (e.g. occupancy counts) will be reduced (e.g. by 30%) during the initial recovery phase Increase to 100% should be gradual and based on monitoring and confidence in the recovery of ATCO skills to handle traffic peaks. Regular re-assessment of the sector configuration scenarios should be carried out based on actual traffic recovery trends.
- Scenario-based pre-tactical ATFCM measures defined. The ATFM measure scenarios should account of different traffic recovery trends, expected traffic complexity, planned and feasible ATC sector configurations depending on availability of ATCOs with valid licences, potential staff shortage due to sickness or COVID-19 infections, estimated period of recovery of diminished ATCO skills.
- Airport capacity and RWY configuration scenarios coordinated with airports and NM. This includes airport operations recovery plans, aircraft stand availability, possible runway configurations to be used (some runways may not be available due to parked aircraft) and use of Airport Corner tool managed by NM for coordination of static and dynamic airport operations related information.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-01: Capacity imbalances and unusual traffic patterns at regional and/or network level.
- Hz-02: Planned ATC sector configuration inadequate to actual traffic demand.
- Hz-03: Pre-tactical ATFM measure(s) inadequate to actual traffic demand
- Hz-11: Supervisors (ATCO and ATSEP) with reduced competence in handling situations due to the long lean traffic periods.
- Hz-23: Confusion due to unusual ground movements and taxi routes on the airport movement area.
- Hz-25: Improper handling of emergencies by all involved parties.

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.

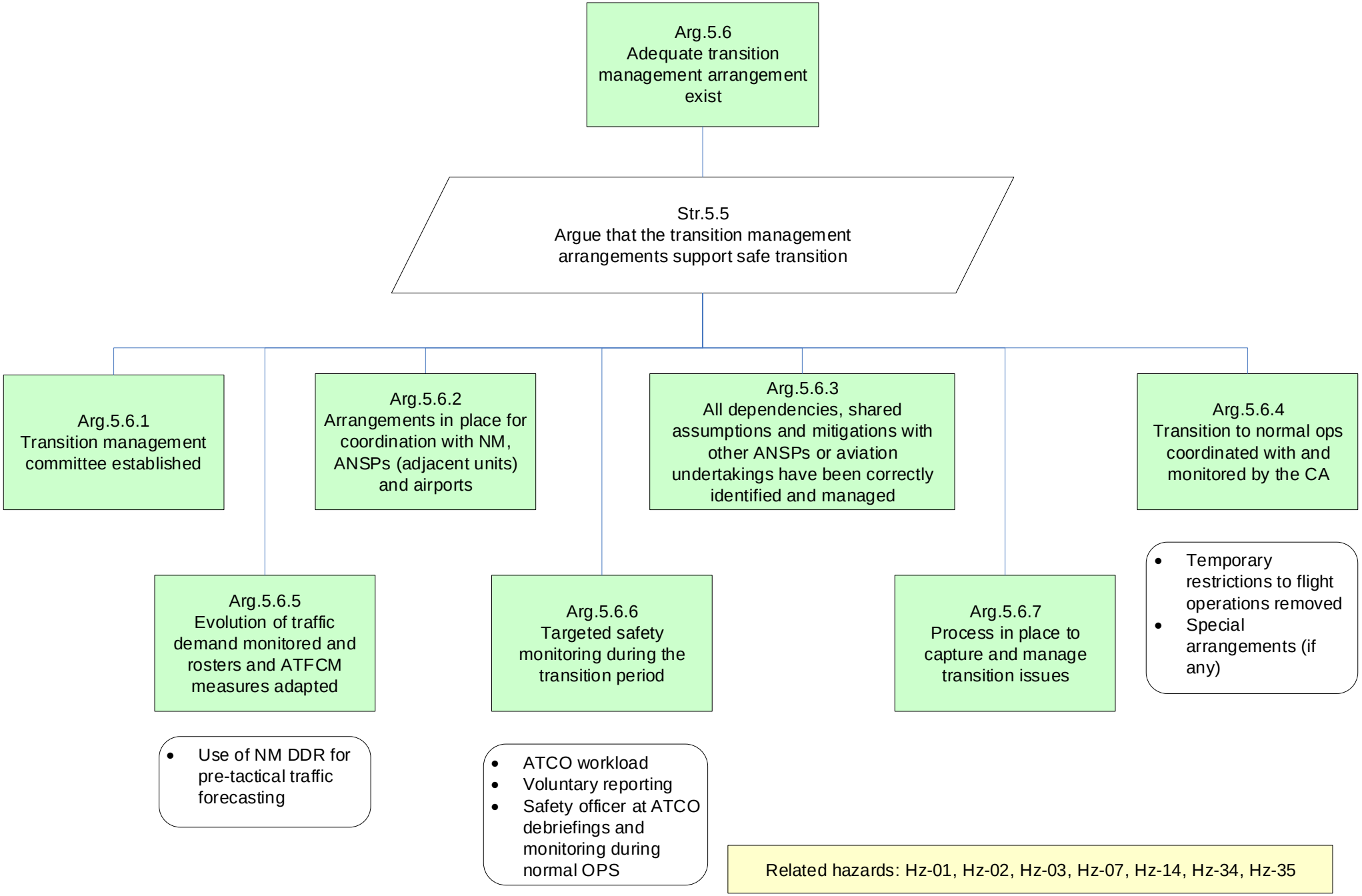
Arg.5.6
Adequate transition management arrangement exist
Str.5.5
Argue that the transition management arrangements support safe transition
Arg.5.6.1
Transition management committee established
Arg.5.6.2
Arrangements in place for coordination with NM, ANSPs (adjacent units) and airports
Arg.5.6.3
All dependencies, shared assumptions and mitigations with other ANSPs or aviation undertakings have been correctly identified and managed
Arg.5.6.4
Transition to normal ops coordinated with and monitored by the CA
Arg.5.6.5
Evolution of traffic demand monitored and rosters and ATFCM measures adapted
Use of NM DDR for pre-tactical traffic forecasting
Arg.5.6.6
Targeted safety monitoring during the transition period
ATCO workload
Voluntary reporting
Safety officer at ATCO debriefings and monitoring during normal OPS
Arg.5.6.7
Process in place to capture and manage transition issues
Temporary restrictions to flight operations removed
Special arrangements (if any)
Related hazards: Hz-01, Hz-02, Hz-03, Hz-07, Hz-14, Hz-34, Hz-35

Figure 11

To prove that Argument 5.6 “Adequate transition management arrangement exist” is true and valid, it has been decomposed into 7 sub-arguments:

- Transition management committee established. A dedicated or an existing management body should take responsibility for the management of the transition to normal operations.
- Arrangements in place for coordination with NM, ANSPs (adjacent units) and airports. This should be implemented by participation in the arrangements for collaborative maintenance and update of the European NOP – 2020 Recovery Plan .
- All dependencies, shared assumptions and mitigations with other ANSPs or aviation undertakings have been correctly identified and managed. Specifics should be addressed on a bilateral basis, however on a wider scale the arrangements for collaborative maintenance and update of the European NOP – 2020 Recovery Plan and the pre-tactical NM briefings should be used.
- Transition to normal operations coordinated with and monitored by the CA. This should include coordination of: recovery plan (e.g. schedule for return to 100% capacity), plan for removal of any temporary restrictions to flight operations, special arrangements and/or procedures for the recovery period (e.g. licences and certificate validity/extension, reduced oversight burden, etc.)
- Evolution of traffic demand monitored and rosters and ATFCM measures adapted. This includes daily review and analysis of traffic demand evolution and regular re-assessment of planned sector configuration scenarios to match them to the demand. If necessary, implementation of changes to the ATCO roster plan.
- Targeted safety monitoring during the transition period. The safety monitoring process established within the scope of the organisational SMS should be reviewed and focused on the recovery related potential safety issues. This could include specific monitoring criteria, resource reassignment, prioritising planned activities and/or frequency of monitoring and analysis cycles updated. Targeted measures could include: ATCO workload monitoring, dedicated voluntary reporting, presence of a safety officer at ATCO debriefings, monitoring during normal operations.
- Process in place to capture and manage transition issues. The process should be based on and consistent with the SMS process for identification and rectification of safety issues. Some adaptation may be needed to include additional organisational units, roles and dedicated transition period arrangements and processes.

The above arguments and the potential measures supporting the arguments could be considered as mitigations to the following transition related hazards identified by the EUROCONTROL collaborative safety arrangements (ST, SAFOPS):

- Hz-01: Capacity imbalances and unusual traffic patterns at regional and/or network level.
- Hz-02: Planned ATC sector configuration inadequate to actual traffic demand.
- Hz-03: Pre-tactical ATFM measure(s) inadequate to actual traffic demand
- Hz-07: Significant increase in ATC workload to handle flights suffering technical or medical issues, VFR and training flights.
- Hz-14: Lower quality or delay of safety deliverables (investigation reports, safety assessments, safety analysis, safety reports).
- Hz-34: Unexpected by ATC flight performance and/or deviation from the expected/cleared trajectory.
- Hz-35: Call-sign confusion

The full list of hazards, the associated causal and contributory factors related to the COVID-19 lock down and some further potential mitigation measures can be consulted in a separate file accessible from ‘Further reading’.