Urban Search and Rescue at Heritage Sites

A GUIDE FOR THE FIELD

CO-CREATION
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CONTENTS

ABBREVIATIONS

ASR	Assessment, Search and Rescue Level
CFA	Cultural Heritage First Aider
EFS	Emergency Fact Sheet
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICOM	International Council of Museums
ICOMOS	International Council on Monuments and Sites
ICOMOS-ICORP	International Council on Monuments and Sites-International Committee on Risk Preparedness
ICMS	INSARAG Coordination and Management System
INSARAG	International Search and Rescue Advisory Group
LEMA	Local Emergency Management Authority
NDMA	National Disaster Management Agency
OSOCC	On-Site Operations Coordination Centre
RDC	Reception/Departure Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAR	Urban Search and Rescue
UCC	USAR Coordination Cell
VOSOCC	Virtual On-Site Operations Coordination Centre

FOREWORD

NOTE FOR REVIEWERS

1. All the words in orange coloured text are glossary words to be hyperlinked in the final design.
2. Icons, hyperlinks and photos will be added once the text is finalised.
3. Please use insert comment and track change features for suggestions and changes.
4. Once the text has been reviewed, it will be sent to a copy-editor for proof-reading and final language check.

1. INTRODUCTION

Urban Search and Rescue at Heritage Sites: A guide for the field is designed to provide Urban Search and Rescue (USAR) Teams, National Disaster Management Authorities (NDMA) and Local Emergency Management Authorities (LEMA), Cultural Ministries, Heritage Departments and Authorities and Cultural Heritage First Aiders (CFA) with standard procedures to be followed, when carrying out operations at heritage sites following a disaster.

It outlines the policy, preparedness and capacities needed for providing cultural heritage first aid as part of search and rescue operations within the International USAR Response Cycle (see also, INSARAG Guidelines 2020 Vol. II, Manual B, pp. 6-7).

The guide will help increase awareness for the safeguard of heritage in the immediate aftermath of a disaster, particularly during search and rescue. This guide may be used by international and national USAR Teams as well as LEMA to self-train and improve overall preparedness; ensuring inter-agency cooperation and coordination between emergency management and cultural heritage sectors.

The International Search and Rescue Advisory (INSARAG) Guidelines 2020 have been used as a key reference for the creation of this guide. Moreover, it draws on the standardised and field-tested methodology for providing cultural heritage first aid, developed by the International Centre for the Study of the Preservation and Restoration of Cultural Property's (ICCROM).

1.1 STRUCTURE

Section 2 on Policy defines what constitutes cultural heritage, current international response mechanisms and capacity building operations for at-risk heritage, and the connections between cultural heritage first aid and USAR operations in affected heritage sites.

Section 3 is divided into five sections based around the USAR Operation Response Cycle:

3.1. Preparedness, outlines actions that USAR Teams and LEMA, in cooperation with national and local cultural heritage agencies, should take in order to enhance their readiness to safeguard cultural heritage during search and rescue where needed.

3.2 Mobilisation explains measures to be taken when international USAR Teams are to be deployed. These measures include gathering basic information on cultural heritage sites where search and rescue may be involved.

3.3 Operations lists the procedures that should be followed if search and rescue is carried out in heritage places.

3.4 Demobilisation and 3.5 Post-Mission Reporting provide guidance to USAR Teams for debriefing and sharing relevant documents that could help safeguard heritage and assist with its first aid.
Section 4 describes the Beyond the Rubble phase, in which the host nation may request the international USAR teams, which have the necessary expertise to assist with cultural heritage first aid.

2. POLICY

This section describes what constitutes cultural heritage; the connections between cultural heritage first aid and USAR operations; factors that USAR Teams must consider when carrying out operations where cultural heritage is involved; and current international response mechanisms and capacity building operations for at-risk heritage.

2.1 Cultural Heritage

Cultural heritage describes the tangible and intangible expressions of life that are produced, maintained and transmitted within a society over time. It links individual and communities with their past, contributes to their identity and helps to provide a sense of continuity.

Tangible cultural heritage may refer, but is not limited to:

- *Immovable cultural heritage*: such as monuments; archaeological sites; religious sites, and places of human habitation including buildings, structures, villages, towns and cities.
- *Movable cultural heritage*: including documents and archives; works of art; handicrafts; musical instruments; furniture; clothing items or personal decoration; religious, ritual and funerary objects; tools; mechanical equipment and industrial systems.

Intangible cultural heritage encompasses traditional practices, representations, expressions, language, performing arts, sport, traditional cuisines, skills and knowledge that a given individual, group or community recognise as part of their cultural heritage.

In most countries, tangible and intangible heritage is designated by the relevant national heritage authorities and is formally listed in the national inventories.

Cultural heritage can be of international, national, regional or local significance. In the event of an emergency, it is necessary to seek permission from the custodian(s) of an affected cultural heritage place or item before taking any action to secure it. Custodians may take different forms, for example a local council, government institution, traditional owner or religious trust.

2.2 Urban Search and Rescue Operations in Cultural Heritage Sites

Amid the chaos and destruction caused by a sudden onset disaster, affected communities always strive to secure and safeguard their cultural heritage, as it provides a thread of continuity and sense of identity in the midst of uncertainty.

Cultural heritage is a critical source for livelihoods therefore, it is vital for resilient recovery of affected communities. In a disaster involving heavy structural damages, search and rescue operations may have to be enacted at a heritage site, village, or urban setting of international, national or local significance.

As stated in the INSARAG 2020 Guidelines, all members must adhere to the core humanitarian principles of inclusiveness, professionalism, respect for diversity and cultural sensitivity.

While carrying out search and rescue at heritage places, USAR Teams must take into consideration the following aspects, which could not only have an impact on the mission effectiveness of those deployed, but also hamper the recovery of the affected community:

- Heritage structures and their construction may differ from the other buildings in the affected area. Therefore, these structures may require a specific approach in terms of USAR skills.

- Heritage sites or structures may contain valuable artefacts or building parts that may cause security problems and additional measures may be required during search and rescue operations to ensure their safeguard.

- In some cases, heritage sites may include sacred structures, objects or specific areas for carrying out rituals that may require USAR Teams to be culturally aware and sensitive to the beliefs of the affected community.

2.3. International Coordination: The UNESCO Rapid Response Mechanism for Heritage Safeguard in Emergencies

In the event of sudden onset damage to cultural heritage, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has established the **UNESCO Rapid Response Mechanism for Culture in Emergencies**. The objective of the mechanism is to deploy at short notice, qualified experts to countries affected by conflicts or disasters, with the purpose to undertake emergency intervention regarding the protection of heritage. The Rapid Response Mechanism for Culture in Emergencies can only be activated at the request of national authorities, and in full consultation with them throughout deployment.

2.4. International Capacity Building: The First Aid to Cultural Heritage in Times of Crisis training of ICCROM

ICCROM, in partnership with multiple international organisations provides periodic training to cultural heritage professionals, first responders, military and civil defence personnel as well as fire fighters at international, national and regional levels. Its standardised methodology for providing cultural heritage first aid is widely implemented by national and local teams in over 70 risk-prone countries.

3. OPERATION RESPONSE CYCLE

Following the International USAR Operation Response Cycle, the subsequent sections of this guide will outline actions to be followed in the different phases of international search and rescue to ensure effective and safe operations at heritage sites and places.

Figure 1: The INSARAG International Response Cycle (INSARAG Guidelines 2020 Vol. II, Manual B, p. 6)

3.1 Preparedness

The preparedness phase is the period between disaster responses. In this phase, USAR Teams undertake preparatory measures to ensure they are at the highest level of readiness for deployment as possible.

For more information:
INSARAG Guidelines 2020 Volume II: Preparedness and Response Manual B: Operations, p. 6: https://perma.cc/JM4A-ZAS6

3.1.1 Preparatory Actions for USAR Teams

This section outlines the preparatory actions that international and national USAR Teams can undertake to enhance their readiness to conduct search and rescue operations at heritage sites and coordinate through LEMA with the deployed CFA (if any) and the relevant heritage agencies to ensure heritage safeguard.

- USAR Teams should be aware of any heritage sites or structures present in the operation area.

- Training for USAR Teams should include how to provide heritage specific information in the pre-deployment. At the same time, training exercises that give insights into the various construction types of heritage structures region by region, could help in developing skills and techniques for undertaking search and rescue at heritage places. Additionally, education on culturally sensitive situations that may arise during operations in heritage sites should be considered as an important element for enhancing the readiness of USAR Teams. Refer to Annex 1: USAR Field Operation Guide for Working at Heritage Sites.

- Three different kinds of trainings could be organised for USAR Team members.

  1. The first, is the basic training for all USAR Teams, which may include:

  - Identification of heritage sites in the Wide Area Assessment.

  - Basic structural awareness for USAR Teams, which is region specific and requires precise advice of architects, engineers and building historians familiar with construction types and materials.

  - Significance of heritage sites for local communities. Again, this aspect is country and region specific. It requires inputs from heritage professionals.

  2. The second type of training could include advanced modules for structural specialists or engineers in USAR Teams on how to approach collapsed heritage structures made of materials such as wood, stone, bricks, using lime or other types of mortars. As mentioned before, these modules should be designed around typical construction types in a specific region and will require the inputs of the relevant heritage professionals.

  3. The third type of training may focus on developing effective communication between USAR Teams and cultural heritage authorities, who can provide relevant information in emergency situations. Training modules for this kind of training could help develop

standardised heritage specific information, which could be given to USAR teams at the time of deployment. Such a training should involve both, USAR and CFA teams.

- USAR Teams should be familiar with advice prepared by cultural heritage authorities and include this information in their response plans.

3.1.2 Preparatory Actions for LEMA

To ensure heritage safeguard during search and rescue and coordination between USAR Teams and heritage professionals or CFA, LEMA should undertake the following preparatory actions:

- In cooperation with local heritage departments, prepare a map indicating the geo-locations of all significant heritage places; including archaeological sites, museums, libraries, archives, religious sites and public monuments. This data should be periodically updated.

- NDMA or LEMA or should obtain floor plans and site maps for significant heritage sites or buildings that attract a great number of visitors. The floor plans should indicate areas accessible to visitors and the significant heritage elements of the site.

- Develop a routine for joint emergency simulations with local USAR Teams, CFA and heritage professionals at sites to improve readiness.

- In cooperation with local heritage departments and CFA, develop and periodically update a list of supplies (pp. 67, 93) needed for cultural heritage first aid.

- Locate sources for obtaining supplies for cultural heritage first aid in the event of a sudden-onset disaster.

- For heritage places that are located in risk-prone regions, develop coordination mechanisms with local CFA Teams and relevant heritage departments or management agencies; and seek their assistance during USAR operations should the need arise.

- Organise simulation exercises in INSARAG Coordination and Management System (ICMS) to ensure readiness for data management during disasters including that pertaining to heritage. Participate in Regional Earthquake Response Exercises as LEMA, which may include simulations of search and rescue at heritage sites.

3.1.3 Preparatory Actions for Cultural Heritage Authorities

To ensure heritage safeguard during search and rescue, cultural heritage authorities in collaboration with CFA and relevant community representatives, should undertake the following preparatory actions:

- Provide geo-referenced and ready to share lists of heritage sites to LEMA in risk-prone areas.

- Prepare documents such as an Emergency Fact Sheet (EFS) for heritage structures that covers region specific information for USAR Teams to use in emergency situations, especially for risk-prone countries.

- Organise information briefs on important cultural heritage sites in each risk-prone country for USAR Teams. This information should include local cultural or religious beliefs and special measures to be followed at heritage sites e.g., working in sacred spaces.

- Organise general awareness as well as specialised training in collaboration with LEMA for all USAR Teams.

- Carry out joint simulations with USAR Teams, LEMA and CFA to test readiness for providing cultural first aid in tandem with search and rescue.

3.2 Mobilisation

The mobilisation phase is the period immediately following the incidence of a disaster. At this time, international USAR Teams prepare to respond and travel to assist the affected country.

For more information:
INSARAG Guidelines 2020 Volume II: Preparedness and Response Manual B: Operations, p. 6: https://perma.cc/JM4A-ZAS6

3.2.1 Recommendations for USAR Teams

Pre-deployment considerations
Information shared by heritage authorities on the Virtual On-Site Operations Coordination Centre (VOSOCC) should be examined and considered, when creating an operation plan. Additionally, USAR Teams should include responsible heritage authorities, identified through LEMA in their communication plans.

- If possible, the deploying USAR Team should include at least one expert member on built heritage.

- The deploying USAR Team should be provided with necessary information about heritage sites and structures in the affected area. This information could be included in the country information sheet/briefing pack for USAR teams (INSARAG Guidelines 2020, Vol. II, Manual B, Annex B5, Form 1). Information on affected heritage sites may include:
    - Location(s) as well as the boundaries of heritage site(s) involved
    - Predominant construction type(s)
    - Predominant functions or uses of the heritage sites involved
    - Significant heritage areas and/or buildings.
    - Cultural sensitivities or concerns regarding the heritage.

- USAR Teams should be familiar with the information provided on the VOSOCC website regarding heritage sites.

3.2.2 Recommendations for LEMA

- LEMA in collaboration with the relevant cultural heritage authorities should provide a heritage specific EFS.

- Remain in communication with INSARAG and update the EFS if necessary. Upload the EFS on the VOSOCC website in emergency situations.

- Appoint a person, who acts as a coordinator for cultural heritage first aid and may be contacted by international USAR teams.

- Establish mechanisms for information flow between USAR Coordination Cell (UCC), CFA and cultural heritage authorities.

3.2.3 Recommendations for Cultural Heritage Authorities

- Through LEMA, remain in communication with INSARAG and update the EFS if necessary.

- Appoint a contact person, who is able to provide both general and technical information about heritage sites and structures within the operation area. This contact person may directly liaise with the person appointed as the coordinator for cultural heritage first aid within LEMA.

- In collaboration with LEMA, prepare a roster of CFA teams and cultural heritage professionals who could be readily deployed during and immediately after search and rescue.

- Assist LEMA in maintaining the information flow with CFA teams and UCC.

3.3 Operations

The operations phase is the period when international USAR Teams are performing USAR operations in the affected country. It begins with arrival of a USAR Team at the Reception/Departure Centre (RDC) in the affected country, registration with the UCC/On Site Operations Coordination Centre (OSOCC), reporting to the LEMA or NDMA, and performance of USAR operations. The phase ends when the USAR Team is instructed to cease operations.

For more information:
INSARAG Guidelines 2020 Volume II: Preparedness and Response Manual B: Operations, p. 6:
https://perma.cc/JM4A-ZAS6

3.3.1 Procedure for USAR Teams

This section details additional procedures that international or national USAR Teams may need to follow while performing search and rescue at heritage places in the affected region. These procedures will ensure that damage to heritage is not increased, and that its safety and security is not threatened further.

The procedures outlined here are designed to enhance mission effectiveness for USAR Teams and are not intended to cause interference in saving lives. Procedures must be carried out with the permission of LEMA or NDMA.

- USAR Teams should be aware of the contact persons for heritage specific information as well as the protocols for sharing information for heritage sites

- Deployed team should indicate if they have an expert member on built heritage construction types and historical sites in their Team Fact Sheet (Annex B5 Form 1) and share this info with RDC.

- If needed, deployed team should request further information on affected heritage site and/or buildings from LEMA or NDMA through UCC or OSOCC.

> **TIP:** In case, the affected country does not have an up-to-date inventory or geo-locations for all heritage sites in operation area, look for signage as well as gather information from the locals.
>
> Unmarked maps are not necessarily an indication that there are no heritage sites within the operation area.

- Boundaries of the heritage sites and locations of significant historical structures should be marked on the sectorisation maps.

- During Assessment, Search and Rescue (ASR) Levels 1-2-3, the designated person in the USAR Team should take one or two overall photos of the heritage site to illustrate the status of the affected heritage structure and other heritage elements, before carrying out search and rescue. The photos recorded are to be shared with LEMA in the demobilisation phase.

> **TIP:** where applicable USAR Teams may attach specific information on damage and pre-operation status to heritage structures and objects additional information to Worksite Triage (Annex B5, Form 2)and Worksite Report (Annex B5, Form 3),. Such information should be recorded in consultation with LEMA See Annex 7, which provides a sample for recording damage and risk information.

- Upon specific request from the deployed USAR Teams, UCC may ask LEMA to seek assistance of local heritage professionals, who could give vital inputs on the type of construction, materials used, and collapse mechanisms of the heritage structures affected.

- USAR Teams should convey all heritage specific information to UCC/OSOCC, which is then to be communicated to LEMA or NDMA.

- Once search and rescue is complete, USAR Teams deployed at heritage sites should leave visible signage indicating the heritage status of the site in order to avoid damage during the debris removal that usually follows a search and rescue operation (see Annex 2. Marking System for Cultural Heritage for suggested signage to identify heritage sites).

3.3.2 Procedure for LEMA

- In the event of a large-scale disaster involving search and rescue at heritage sites, LEMA or NDMA of the affected country should indicate the presence of heritage assets, while preparing the sectorisation plan (see Annex 1. USAR Field Operation Guide for Heritage Sites).

- During ASR Levels 1 and 2 i.e. Wide Area Assessment and Sector Assessment; upon mapping of heritage assets, LEMA should provide basic information on the nature and significance of the heritage assets involved.

- Upon receiving request for assistance from UCC/OSOCC, LEMA in consultation with the relevant authorities should provide inputs from heritage professionals and CFA Teams for facilitating search and rescue and taking appropriate measures to ensure safety and security at the heritage site.

- LEMA should provide necessary supplies such as caution tapes, barriers etc for securing the site once search and rescue is over.

3.3.3 Procedure for Cultural Heritage Authorities

- Cultural heritage authorities and CFA must be organised to receive relevant information regarding cultural heritage concerns and provide necessary feedback using both online platforms and/or by being present at the location of UCC.

- CFA or heritage professionals appointed as the contact person by the cultural heritage authorities should liaise with the designated person in LEMA to provide necessary supplies including signage for securing heritage sites, once search and rescue is over.

These supplies may be made available to the USAR Team through UCC (see Annex 3. List of Supplies for recommendations).

- The designated person in the USAR Team should transmit the damage and risk information for cultural heritage collected at the worksite to the designated contact person at the UCC. This information will help to plan cultural heritage first aid in Beyond the Rubble phase.

- During search and rescue, significant building parts such as carved or decorated railings, painted panels, wood or stone carvings or historic windows and door frames, are often displaced. Similarly, if the worksite has a museum or religious site, objects of great significance to the communities in the affected area could be at risk. If heritage objects are scattered and exposed to elements, the heritage materials must be secured. Cultural heritage authorities in close collaboration with LEMA, should be ready to deploy CFA to provide cultural heritage first aid once, the search and rescue is over

For more information:
First Aid for Cultural Heritage in Times of Crisis Handbook and Toolkit (Tandon 2018a, 2018b).

3.4 Demobilisation

The demobilisation phase is the period when the international USAR Teams have ceased operations and commenced withdrawal, coordinating their departure through the UCC/OSOCC, departing the affected country through the RDC, and travelling to their home country.

For more information:
INSARAG Guidelines 2020 Volume II: Preparedness and Response Manual B: Operations, p. 7: https://perma.cc/JM4A-ZAS6

3.4.1 For USAR Teams

- The USAR Teams deployed at heritage sites should share all heritage related documentation including worksite triage forms, reports and photos with LEMA.

- Upon request of the host country (conveyed through LEMA), expert USAR members on built heritage and heritage sites may give support for emergency stabilisation of structures or help provide temporary cover for exposed heritage structures. See Annex 4. Creating Temporary Cover for Exposed Cultural Heritage and First Aid to Cultural Heritage in Times of Crisis Handbook and Toolkit.

- If requested, USAR Teams may assist CFA in salvaging heritage fragments and objects and relocating them on the worksite or to another safer location. For detailed information see Annex 5. Guide to Handling Movable Cultural Heritage and Annex 6. Movement and Tracking Form for Handover of Objects Relocated to Secure Storage. For more detailed information, visit First Aid to Cultural Heritage in Times of Crisis Handbook and Tool Kit, Annex II.

3.4.2 For LEMA

- In the demobilisation phase, LEMA should be prepared to collect all worksite triage forms and reports including photos that document the pre-operation status of the affected heritage sites in the operation area. This information must be shared with the relevant cultural heritage authorities and CFA Teams to implement safety and security measures at the affected sites and plan subsequent cultural heritage first aid operations.

- If needed, LEMA should coordinate submission of requests to USAR Teams for assistance with emergency stabilisation of structures or salvage of objects.

- LEMA should provide the necessary supplies for cultural heritage first aid at the affected sites. See Annex 3. List of Supplies and First Aid to Cultural Heritage in Times of Crisis Handbook and Toolkit.

3.4.3 For Cultural Heritage Authorities

- Cultural heritage authorities should ensure a smooth transition from USAR operations to Beyond the Rubble and early recovery phase.

- They should be ready to deploy CFA to secure affected sites and provide cultural heritage first aid.

- Through reports and documentation provided by LEMA, they should make arrangements for procuring necessary supplies for structural stabilisation as well as emergency salvage and evacuation at the affected sites. In the demobilisation phase, cultural heritage authorities should also plan for providing psychosocial first aid to communities directly associated with the affected heritage sites. Refer to First Aid to Cultural Heritage in Times of Crisis Handbook and Toolkit., for additional information.

3.5 Post-Mission

The post-mission phase is the period immediately after a USAR Team has returned home. In this phase the USAR Team is required to complete and submit a post-mission report and conduct a review to improve the overall effectiveness and efficiency for response to future disasters. The post-mission phase continuously merges into the preparedness phase.

For more information:
INSARAG Technical Library, Post Mission https://perma.cc/76KH-4K5A

3.5.1 For USAR Teams

- The post-mission report should include detailed information on interaction with heritage sites, buildings and/or objects.

- A review on experience gained, and lessons learnt should be prepared and presented at the Team Leaders meetings or regional meetings.

3.5.2 For LEMA and Cultural Heritage Authorities

- In the post-mission phase, LEMA must gather all the post-mission reports and share them consistently with the relevant cultural heritage authorities to plan and implement cultural heritage first aid.

- Cultural heritage authorities in coordination with LEMA should begin deployment of CFA and heritage specialists. Where necessary, they should seek LEMA's assistance for specialised equipment and volunteers for carrying out stabilisation, salvage and debris removal at the affected heritage sites.

4. Beyond the Rubble

In this phase the transition from USAR operations and emergency response to recovery takes place. If requested by the host nation, in this phase USAR Team members who have the relevant training and experience may continue to work with heritage experts and CFA in order to support the recovery of the affected sites and associated communities.

These operations may include, but may not be limited to:

1. assisting in structural safety assessments;
2. providing technical inputs in post-event damage and risk assessments for heritage structures and objects;
3. Securing heritage sites by placing barriers and removing hazardous materials;
4. providing temporary cover to exposed buildings and objects;
5. emergency stabilisation of heritage structures;
6. evacuation of heritage objects and relocation to other safer places;
7. salvage of heritage fragments and objects and their temporary storage;
8. building temporary storages;
9. transporting supplies;
10. and providing psycho-social help to traumatised heritage communities and cultural bearers.

For more information:
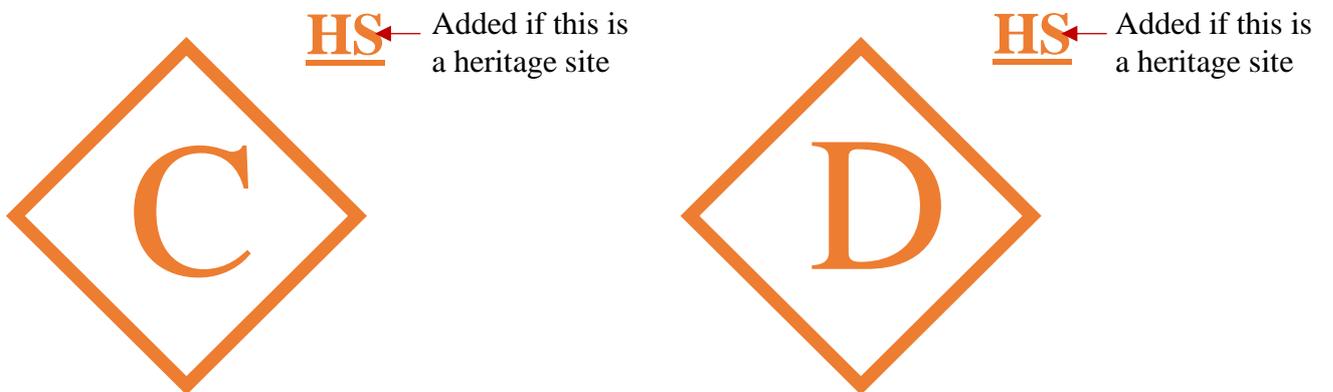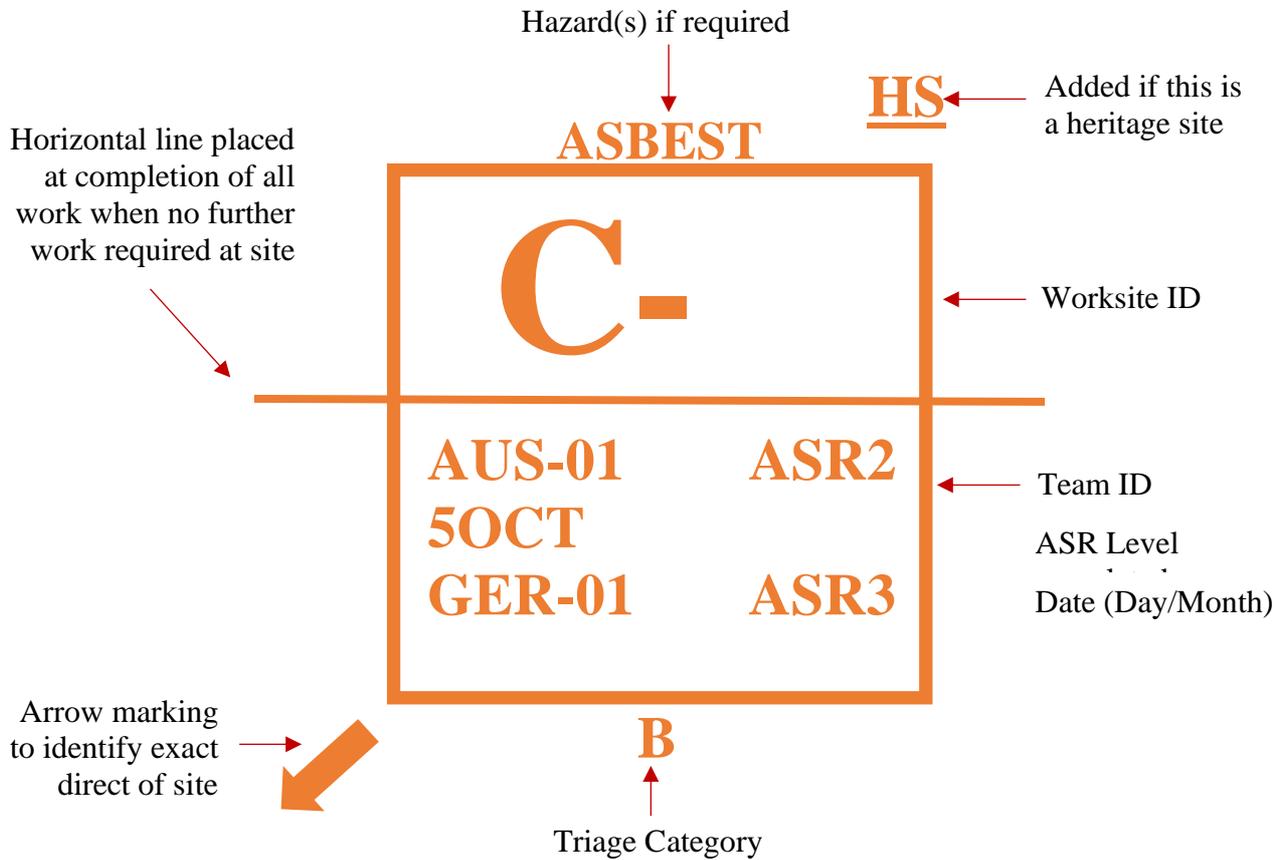First Aid for Cultural Heritage in Times of Crisis Handbook and Toolkit (Tandon 2018a, 2018b).

Annexes

ANNEX 1. USAR Field Operation Guide for Working at Heritage Sites

- Get the necessary information on the cultural heritage sites and buildings in the affected area of the country that you are deploying to, from VOSOCC and/or the host country.

- Include the following information in the Country Information Sheet/Briefing Pack:
  - General physical characteristics of the urban fabric; location, boundaries, roads and density.
  - Predominant construction type.
  - Predominant building functions.
  - Significant heritage areas and/or buildings.
  - Cultural sensitivities or concerns regarding the heritage.

- Include the information you acquired in your operation plan.

- If available, include at least one expert member, who has the knowledge of different types of construction and materials used in heritage structures.

- Include the information regarding your expert member in your team fact sheet.

- Include responsible heritage authorities in your communication plans.

- Check, if you need any additional equipment specific to the construction systems for affected heritage buildings in the damaged area for search and rescue operation.

- Deploying USAR Team should be provided with necessary information about heritage sites in the affected area. This information should be included in the country information sheet/briefing pack of USAR Teams.

- Inform RDC if you have an expert team member, who has prior knowledge of the types of construction and materials used at the affected heritage sites.

- If needed, request further information on affected heritage sites and buildings from LEMA or NDMA through UCC/OSOCC.

- Identify the heritage sites and significant historical buildings and mark their location on sectorisation map during the Wide Area Assessment.

- If you are going to perform a rescue operation at a religious site, seek information from LEMA on how to enter the area and respect local beliefs and customs, while conducting search and rescue.

- If you are going to perform a rescue operation at a museum, a library or an archive that contains movable heritage, secure the area to prevent looting and to protect the objects in coordination with LEMA. Make sure to communicate any safety or security concerns that may arise with UCC.

- If you need to move building parts of a historical building during rescue operation, collect the fragments and store in a nearby location, **do not throw them away**. Once the operation is over, take a photo to document the parts relocated.

- While shoring collapsed structures during rescue operations, keep in mind that the building has a historical structural system and that any intervention carried out should be temporary in nature.

- If required, assistance of local experts, who have knowledge about the built heritage, could be sought through UCC and LEMA, if required.

- Report to LEMA or NDMA through UCC/OSOCC in case you have moved building parts during search and rescue or have taken any other measures to the exposed heritage fragments, objects and the site itself.

- During ASR 1-2-3 Phases, the Designated Person in the USAR Team should take one or two photos of the heritage site to illustrate the overall view of the affected heritage structure and other elements, before carrying out search and rescue. The photos recorded are to be shared with LEMA in the demobilisation phase.

- After taking a photo of the worksite, recording pre-operation status of the heritage building and other elements, the designated person in the team should fill the initial damage and risk information (Annex 7. Damage and Risk Information for Cultural Heritage Form) for various heritage elements at the worksite. I can be added as an attachment to the Worksite Triage and Worksite Report Forms.

- Be aware of information sharing mechanisms for heritage sites during a disaster. In most cases, heritage structures have structural and non-structural elements that have high historical significance. Therefore, ensure that the specific damage and risk information is shared only with responsible authorities in accordance with the prescribed security protocols.

- During Wide Area Assessment, after the rescue operation, leave signage in visible places, marking the site as a heritage site. See suggested marking style in Annex 2. Marking System for Cultural Heritage.

- Do not use spray paint to mark heritage sites.

- Upon request from the host country, USAR Team members who have the relevant knowledge and experience may assist LEMA and CFA with emergency stabilisation of heritage structures or assist with other cultural heritage first aid measures.

ANNEX 2. Proposed Method for Marking Cultural Heritage Sites based on the INSARAG Marking System

Hazard(s) if required

Added if this is a heritage site

Horizontal line placed at completion of all work when no further work required at site

HS

ASBEST

C-

Worksite ID

AUS-01
5OCT
GER-01

ASR2

ASR3

Team ID

ASR Level

Date (Day/Month)

Arrow marking to identify exact direct of site

B

Triage Category

HS Added if this is a heritage site

C

HS Added if this is a heritage site

D

ANNEX 3. List of Supplies

For Documentation

- Camera (with spare batteries and SD card) or smartphone, for photo documentation.
- Sketch pads and note pads
- Clipboard
- Pens, pencils and erasers
- Twill or thick cotton string for tying packages and labels
- Self-adhesive labels
- Range pole
- Measuring tape, ruler and 10cm scale

For Object Packing and Transport

- Unstarched muslin or fine cotton fabric.
- Pure rag paper or any acid free alternative.
- Polyester film, commonly sold as 'mylar' or 'melinex'
- Tyvek
- Tarpaulin
- Polyethylene foam
- Polyethylene bags (Ziploc bags).
- Bubble wrap
- Cushions/pillows. Do not use down-filled pillows as they often harbour insects.
- Light-coloured clean cotton towels or rags
- Cardboard boxes
- Plastic boxes, crates and trays
- Wooden fruit crates and pallets
- Rolling/poster tubes
- Packing tape
- Scissors
- Box-cutter knives
- Self-adhesive labels
- Pens and permanent markers

For Creating a Temporary Cover for Exposed Cultural Heritage

- Tarpaulin
- Rope
- Tent pegs
- Sandbags
- Gaffer tape
- Wooden planks
- Roll of wire
- Nails
- Hammer or mallet

ANNEX 4. Creating a Temporary Cover for Exposed Cultural Heritage

For structures and heritage objects that are unable to relocated off-site, it may be necessary to create a temporary cover or protection from the elements to prevent further structural collapse or unwanted intrusions. For additional instructions, refer to the First Aid For Cultural Heritage Toolkit (Tandon 2018 p. 73).

1.   Measure the length and width of the pile of debris or in-situ heritage.

2.   Use a tarpaulin, with dimensions larger than the pile of debris you have measured. If you cannot find material large enough to cover the surface area, join as much material as required together with strong, pressure sensitive tape to create the desired size.

3.   Cover the debris and secure the cover to the ground by nailing it down with tent pegs, or by weighing it down using heavy objects such as sandbags. Alternatively, a tent or temporary shelter can be erected, providing coverage on all sides, if resources permit.

ANNEX 5. Guide to Handling Cultural Heritage Objects

- Use nitrile or vinyl gloves to handle heritage materials that are dusty or contaminated. Make sure the glove fit your hands properly; poorly fitted gloves may cause you to inadvertently drop or cause damage to the object.

- Change your gloves when they get too dirty to avoid cross-contamination of dirt.

- Wear a dust mask when handling dusty or dirty objects.

- Remove jewellery and accessories that may become entangled or scratch the object.

- Before transporting objects or building fragments from one place to another, identify a clear path and ensure there are no obstacles.

- Always use two hands to hold an object. To ensure that the weight of the object is balanced, place one hand underneath the object and use the other hand to support the body of the object.

- Do not carry objects by their handles, spouts, or other fragile or protruding elements.

- To avoid accidents or breakage, do not carry too many objects at the same time.

- Where possible, use containers, boxes or trays to move objects. For transporting objects over a distance, use a trolley if available.

- To carry fragile items such as paintings, paper objects, textiles or small building fragments, use flat pieces of cardboards or plywood.

- If materials such as paper or textiles are found in damp or wrinkled condition, do not try to straighten them. Simply place them on a flat surface and leave them to air dry in the shade.

- Avoid exposing wet, dry or brittle heritage materials to direct sunlight.

- For heavy or oversized objects, at least two people are needed to transport the object safely

ANNEX 6. Movement and Tracking Form for Handover of Objects Relocated to a Secure Storage

Heritage Objects Handover Form

Name: Date: Worksite Number: Storage Location:

Entry number	Box number	Number of items in box	Handling instructions	Dispatched by	Date left site	Courier/vehicle number	Date received	Box number	Number of items in box	Received by
1	1	5	Ceramics. Handle with care	J. SMITH,	DD/MM/YYYY	123456	DD/MM/YYYY	1	5	A. HILL, Custodian
2										
3										
4										
5										

I hereby confirm that the above items recorded have been checked and taken into the care of ……………………………………… on this date …………………………

Annex 7. Sample Form for filling in Damage and Risk Information at Cultural Heritage Sites

Note: Listed below, is the typical first damage and risk information that USAR Teams could provide when carrying out operations at cultural heritage sites. This form may be annexed to the Worksite Triage and Worksite Report Forms that USAR Teams use in the normal course.

Worksite ID: _____

Here fill in the Worksite ID allocated during ASR2, e.g. "A-1" – Sector A- Worksite 1

Heritage Building number: _____

Here fill in the building number allocated during Worksite Triage. If the Worksite contains a single building then it would be the same number as that of the Worksite, e.g. "A-1". In case there are more than one triaged buildings on the Worksite, then specific building numbers may have to be given, such as "A-1-3", i.e. Building number 3, on Worksite 1 in Sector A.

1. Are there any routes open and accessible, for medium or heavy weight vehicles to reach the site? Check the appropriate box.

   ☐ Yes
   ☐ No

   If yes, please mark them on a roughly drawn site map.

This information will help in planning subsequent cultural heritage first aid operations.

2. Which material(s) have been used in the building and what construction system is used to build it? Check the appropriate box.

   ☐ Stone masonry structure with load-bearing walls and gable roof
   ☐ Timber frame structure
   ☐ Brick masonry
   ☐ Adobe (mud) structure with load-bearing walls, vaults and domes
   ☐ Concrete structure

3. Please indicate the type of collapse suffered by the heritage structure. Check the appropriate boxes.

☐ **Inclined:** one, some, or all of the columns and walls have collapsed in a way that floors collapse on an incline.

☐ **Overturn:** part or all of the building has fallen to the side.

☐ **Pancake:** one, some, or all floors have collapsed completely.

☐ **Debris heap:** one, some or all of the floors, columns and walls have collapsed resulting in a heap of debris

☐ **Overhang:** lower parts of the building have collapsed, leaving the higher part of the building to hang over the lower part.

☐ Other (please explain) _____

4. What are the different types of structural damage observed? Check the appropriate boxes.

☐ Leaking, collapsed or blown-off roofs
☐ Bowing, leaning or bulging in walls
☐ Diagonal cracks at the top and bottom corners of walls
☐ Vertical cracks at the corner of walls
☐ Façade disconnection
☐ Cracks, buckling or collapse of floor slabs
☐ Other (please explain) _____

5. Please identify the critical non-structural damage that the building has suffered. Check the appropriate boxes.

☐ Damaged furniture and objects
☐ Windows and Doors coming off their hinges
☐ Broken or dismantled historic wall cladding
☐ Collapse of cantilever sun-shades
☐ Damaged Parapet
☐ Collapse of balcony stone balustrade
☐ Displacement of roof tiles
☐ Damage to sanitary equipment and plumbing lines
☐ Damage to electrical cables and wires

6. What type of heritage objects located in the building? Indicate by checking the appropriate boxes.

    ☐ Frescoes or wall canvases
    ☐ Books
    ☐ Textiles
    ☐ Coins
    ☐ Manuscripts
    ☐ Sculptures
    ☐ Mosaics
    ☐ Photographs
    ☐ Audio/Visual tapes
    ☐ Other (please explain) _____

7. Please record the type(s) of damage to these heritage objects and check the appropriate boxes.
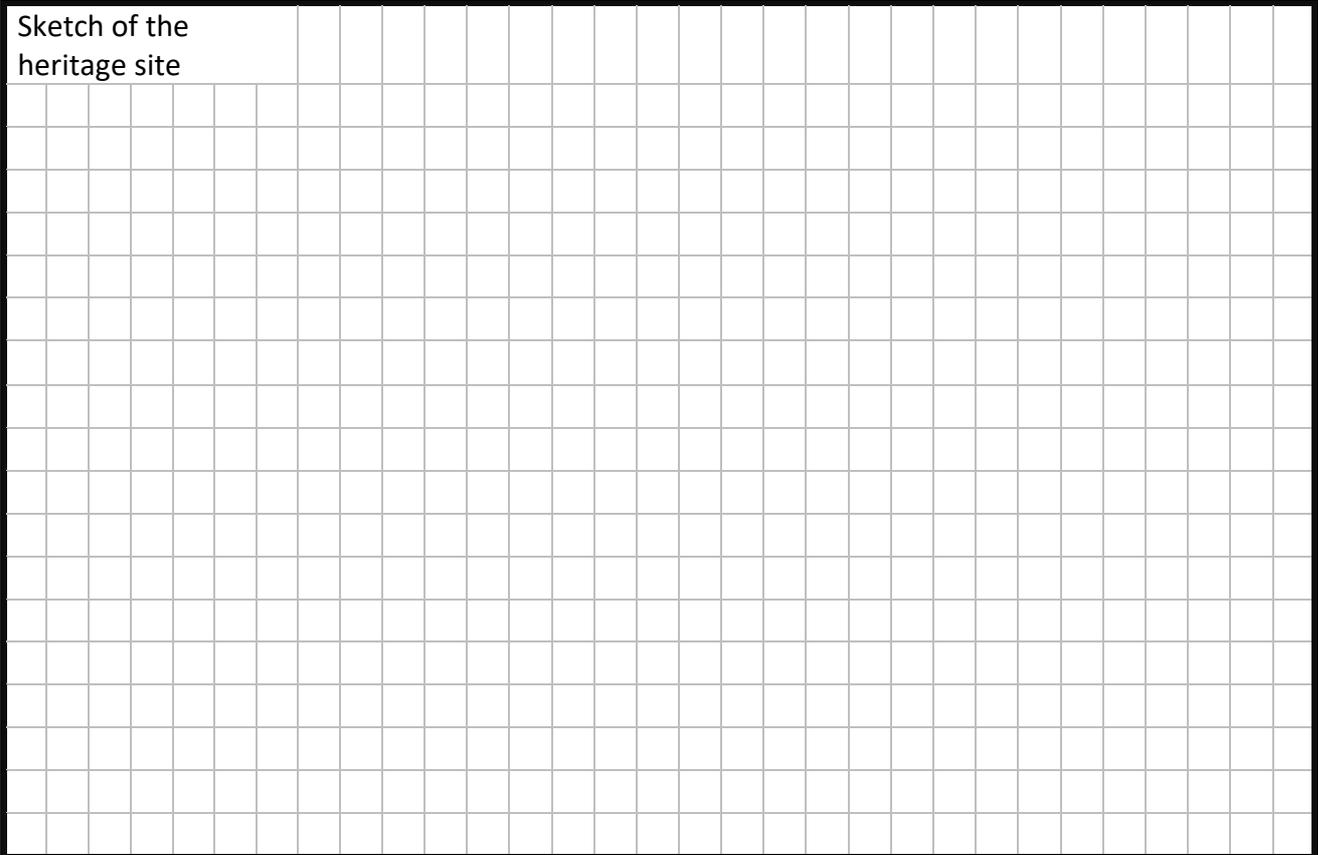
    ☐ Objects are buried under rubble or scattered on the site
    ☐ Objects are wet and covered with mud or sewage.
    ☐ Objects are burnt
    ☐ Objects are deformed, broken, cracked or torn

8. Which secondary hazards could affect the heritage structures and objects? Check the appropriate boxes.

    ☐ Theft of heritage materials
    ☐ Fire due to flammable materials on the site
    ☐ Aftershocks following a major earthquake
    ☐ Water leaks due to damaged sanitary or drainage systems
    ☐ Deterioration of heritage materials, due to exposure to harsh weather conditions
    ☐ Other (please explain)_____

9. Sketch the heritage site to show the location of critical damage to heritage structures and/ or mark the location of damaged objects.

Sketch of the heritage site																					

10. Kindly list the immediate actions that need to be taken in order to secure and stabilise the building or objects.

☐ Putting temporary cover on damaged heritage buildings or objects
☐ Securing the area around the effected site by installing fences and signage
☐ Retrieving and carefully moving the building parts, fragments and objects
☐ Shoring and propping in buildings to provide temporary structural support
☐ Other (please explain) _____

Glossary

Assessment, Search and Rescue Level (ASR)

ASR refers to the five operational levels that can define the phases of potential USAR related work normally needed during a major USAR incident. The five levels are:

- Level 1: Wide Area Assessment
- Level 2: Sector Assessment
- Level 3: Rapid Search and Rescue
- Level 4: Full Search and Rescue
- Level 5: Total Coverage Search and Recovery.

These levels will not always be conducted by international USAR teams; often LEMA resources will carry out some of the work. The levels may also be combined when appropriate and carried out simultaneously in different areas of the incident (INSARAG Guidelines 2020, Vol. II, Manual B, pp. 30-35)

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Beyond the Rubble

The activities offered or conducted by USAR teams deployed after a disaster to overcome the transitional phase between the USAR and the following early recovery/relief phase (INSARAG Guidelines 2020, Vol. II, Manual B, p. 54).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Cultural Heritage

Cultural heritage may be defined as the expression of the ways of living as developed by a community that are passed on from generation to generation, including customs, practices, places, objects and artistic expressions and values. Frequently, cultural heritage is characterised as either tangible or intangible. (ICOMOS, 2002).

Cultural Heritage First Aid

The immediate and interdependent actions taken to stabilise and reduce risks to endangered cultural heritage during and after an emergency. (Tandon, 2018a p. 10).

Read more:
Tandon, 2018a: https://perma.cc/CS5P-5Y7S

Cultural Heritage First Aider (CFA)

A cultural first aider is someone who has received prior training in safeguarding endangered cultural heritage during, or immediately after an emergency. They can plan and implement first aid operations in coordination with emergency responders, humanitarian professionals, heritage owners and volunteers. They are deployed internationally either through bilateral arrangements with the affected country, or through international organisations such as UNESCO, ICCROM, ICOMOS and ICOM (Tandon, 2018a p. 16).

Read more:
Tandon 2018a: https://perma.cc/CS5P-5Y7S

Disaster

A serious disruption of the functioning of a community or society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. (UNISDR, 2009, p. 9).

Read more:
UNISDR, 2009: https://perma.cc/85M4-6TB9

Heritage Asset

A heritage asset is an item or place whose value is based on its significance within a community or nation's society, knowledge and culture. Its significance is derived from its aesthetic, historic, scientific, social or spiritual value. A heritage asset may be tangible or intangible. (Resource Planning and Development Commission, 2003).

Read more:
Resource Planning and Development Commission, 2003: https://perma.cc/CNS7-SZNA

Intangible Cultural Heritage

Intangible cultural heritage encompasses the practices, representations, expressions, knowledge, skills, instruments, objects, artefacts and cultural spaces that a given community, group or individuals recognise as part of their cultural heritage. It is transmitted from generation to generation and is continually redefined by communities in response to their interactions with their surrounding environments and history; thus, forming a sense of identity and continuity that promotes respect for cultural diversity and human creativity. Such heritage is expressed through oral tradition; customs; language; performing arts; ritual and festive events; popular sports; food and culinary arts; traditional medicine and pharmacopeia; traditional crafts and associated skills of production; and knowledge and practices that concern the natural environment. (ICOMOS, 2002; UNESCO, 2003).

Read more:
UNESCO, 2003: https://perma.cc/5ZXN-XCPV

International Search and Rescue Advisory Group (INSARAG)
INSARAG is an intergovernmental humanitarian network of disaster managers, government officials, non-governmental organisations (NGOs) and USAR practitioners operating under the umbrella of the UN, and within the realm of its mandate contributes to the implementation of the International Strategy for Disaster Reduction (INSARAG Guidelines 2020, Vol. I, p. 7)

Read more: INSARAG, 2020: https://perma.cc/JM4A-ZAS6

INSARAG Coordination and Management System (ICMS)
A web based INSARAG management and coordination system. It contains digital forms (Survey 123 application) and an ESRI-based dashboard that displays the data collected on the forms as numbers, charts and on a map (INSARAG Guidelines, 2020, Vol. II, Manual B, p. 23).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Local Emergency Management Authority (LEMA)
The term used to describe the local emergency management authority. The LEMA is the ultimate responsible authority for the overall command, coordination and management of the response operation. LEMA can refer to national, regional or local authorities, or combinations thereof, which are collectively responsible for the disaster response operation (INSARAG Guidelines 2020, Vol. II, Manual B, pp. 11-12).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

National Disaster Management Agency (NDMA)
A central government body with overall responsibility for coordinating disaster management preparedness, relief and recovery in a country (Carter and Pozarny, 2016, p. 1).

On-Site Operations Coordination Centre (OSOCC)
Coordinates international responders and supports the initial inter-cluster coordination mechanisms such as health, water, sanitation, and shelter. The OSOCC covers two main objectives:

- To rapidly provide a means to facilitate on-site cooperation, coordination and information management between international responders and the government of the affected country in the absence of an alternate coordination system.
- To establish a physical space to act as a single point of service for incoming response teams, notably in the case of a sudden-onset disaster where the coordination of many international response teams is critical to ensure optimal rescue efforts (INSARAG Guidelines 2020, Vol. I, p. 27).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Psychosocial First Aid
Is an approach to helping people affected by an emergency, disaster or traumatic event. Using basic support principles to promote natural recovery, it involves helping people to feel safe, connected to others, calm and hopeful, access physical, emotional and social support, and feel able to help themselves. Psychological first aid aims to reduce initial distress, meet current needs, promote flexible coping and encourage adjustment (Australian Psychological Society & Australian Red Cross, 2013).

Read more:
Australian Psychological Society & Australian Red Cross, 2013: https://perma.cc/WRY5-39YM

Reception/Departure Centre (RDC)
The central intake area for international relief traffic. Coordinates incoming international USAR Teams and other humanitarian assistance and reports to the **LEMA** through **OSOCC**. Also coordinates the departure of the teams post-mission (INSARAG Guidelines 2020, Vol. I, p. 26).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Significance
The meaning and values of an item, collection, or tradition and what makes it important. Significance is the historic, aesthetic, scientific and social values that a cultural heritage asset has for past, present and future generations. (Russell & Winkworth, 2009).

Read more:
Russell & Winkworth, 2009: https://perma.cc/GJ8G-ERAN

Tangible Cultural Heritage
Tangible cultural heritage is composed of the physical manifestations of culture produced, maintained and transmitted within a society. Imbued with cultural significance. Tangible cultural heritage may refer to:

a. **Immovable cultural heritage**: places of human habitation including buildings; villages; towns and cities; and structures.

b. **Movable cultural heritage**: documents and archives; works of art; handicrafts; musical instruments; furniture; clothing items of personal decoration; religious, ritual and funerary objects; tools and mechanical equipment; and industrial systems (Tandon, 2018a, p. 148).

Urban Search and Rescue (USAR)

USAR involves the location, extrication, and initial stabilisation of people trapped in a confined space or under debris due to a sudden-onset large-scale structural collapse, in a coordinated and standardised fashion. This can occur due to disasters, landslides, accidents, and deliberate actions. The aim of search and rescue operations is to rescue the greatest number of trapped people in the shortest amount of time, while minimising the risk to rescuers (INSARAG Guidelines 2020, Vol. I, pp. 22-26).

USAR Coordination Cell (UCC)

A sub-component of the OSOCC usually established prior to the arrival of the rest of the OSOCC personnel. It functions as a stand-alone entity until absorbed into the full OSOCC structure. The UCC is responsible for making contact with other appropriate agencies or authorities; maintain a link with the RDC to obtain updated data; and meet with the OSOCC Manager and receive LEMA objectives and rescue priorities, Function and position of teams already at work sites, Reporting and briefing schedules, and Other information included in the INSARAG LEMA briefing form (INSARAG Guidelines 2020, Vol. II, Manual B, p. 23).

Read more:
INSARAG, 2020: https://perma.cc/P7A5-G6C8

Virtual On-Site Operations Coordination Centre (VOSOCC)

The VOSOCC is a web-based information management tool. It is a virtual version of the OSOCC. The VOSOCC is a crucial information sharing portal to facilitate near real-time information exchange amongst international responders and with the affected country, and the UN response mechanisms, following a sudden-onset disaster (INSARAG Guidelines, 2020, Vol. II, Manual B, p. 10).

Note: Access to the VOSOCC is restricted to emergency response stakeholders – registration is required. The VOSOCC is managed by the Activation and Coordination Support Unit in OCHA-Geneva.

Read More:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Wide Area Assessment

ASR Level 1, The preliminary survey of the affected or assigned area. Used for determining the scope and magnitude of the incident; identifying scope, location and types of damage; estimating urgent resource needs; developing a sectorisation plan; establishing priorities; identifying general hazards; identifying infrastructure issues and identifying potential BoO locations. It is usually done by vehicle, helicopter, waterborne craft, on foot or from reports from others e.g. LEMA disaster (INSARAG Guidelines, 2020, Vol. II, Manual B, p. 31).

Read More:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

Worksite

Any site where USAR operations are carried out. Typically, a Worksite will be one building where one Team is working where there is thought to be the potential for a live rescue. However, they can be much larger or smaller. For example, a large building or complex of buildings may be identified as a single worksite. Alternatively, the site of a single rescue in an area of only a few square metres would also be identified as a Worksite (INSARAG Guidelines, Vol. II, Manual B, pp. 26-27).

Read more:
INSARAG, 2020: https://perma.cc/JM4A-ZAS6

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