

Register of Authorities: Toward a Common Alerting Protocol - Profile

“Prevention pays if it is done right, and building stronger institutions and networks and making information more accessible is part of the solution.”¹ In this regard, a multi-hazard disaster management approach requires improved exchange of real-time risk information of significance.

Under a well-developed disaster management system, the Disaster Management Organization (DMO) of a Country should be aware of and should map every significant emergency incident or risk in the country, down to the level of something as minor as a landslide caused by torrential rains². The local road maintenance authority would issue an alert about the blocked road to local disaster management, police, health and other authorities. This would prepare all coordinators for emergency events. Health authorities would know not to dispatch an ambulance along that road. Local disaster authorities would be prepared to avoid that route in an evacuation event, if the sever-weather escalated.

Disseminating such information among multiple agencies can be complicated. The Common Alerting Protocol³ (CAP) lays out emergency policies and procedures for streamlined information sharing. In this vein, CAP Profile for the Country would establish a comprehensive emergency communication protocol for that Country. Developing a register of alerting authorities would be a key step toward implementing CAP-Country-Profile. DMO should so do, following the method outlined in this brief.

The World Meteorological Organization (WMO) maintains an international Register of Alerting Authorities which uses an ‘object identifier’ (OID) standard⁴. Several organizations of member states have registered with WMO⁵. The DMO, in its core business of facilitating early warnings, should follow the OID standard in developing a register of authorities for their Country.

1 Introduction

LIRNEasia recommends developing a CAP and OID compliant register of authorities as a first step toward implementation of the CAP-Country-Profile. CAP is a worldwide content standard for exchanging warnings and alerts, recommended by the International Telecommunication Union⁶ (ITU). CAP is ideal for emergency communications systems because of its clearly defined elements and capacity for supporting data interchange across multiple dissemination channels. A single submission at a central information hub can generate multiple downstream alerts. CAP supports situational awareness and incident management. A CAP-enabled national incident communication system integrates easily with other national and international incident management systems.

While CAP is the technical layout, a ‘CAP-Profile’ defines the policies and procedures for operationalizing such a system for a particular country.

- 1 Apurva Sanghi's (Senior Economist, World Bank, UN-World Bank). “Natural Hazards, UnNatural Disasters: The Economics of Effective Prevention”, Third Session of the Global Platform for Disaster Risk Reduction, published by the International Institute for Sustainable Development: <http://www.iisd.ca/download/pdf/sd/yimbvol141num6e.pdf>
- 2 The second item listed, in the Hyogo Framework for Action, is “Identify, assess and monitor risks and enhance early warning.” United Nations International Strategy for Disaster Reduction, World Conference on Disaster Reduction, Hyogo, Japan 2005: <http://www.unisdr.org/we/coordinate/hfa>
- 3 CAP Cookbook. 2009. CAP Fact Sheet, Jan. 14 2009 [cited April 2009]. Available from http://www.incident.com/cookbook/index.php/CAP_Fact_Sheet.
- 4 The WMO Register of Alerting Authorities is rooted at the OID 2.49.0, which translates in text format: {joint-iso-itu-t(2) alerting(49) wmo(0)}.
- 5 WMO-registered alerting authorities can be found at the URL site: <http://www-db.wmo.int/alerting/authorities.html>
- 6 Recommendation ITU-T X.1303 is the publication with the CAP version 1.1 specifications.

CAP-Country-Profile Objectives

- Define policies and procedures for administering and operationalizing multi-hazard all-media alerts and warnings.
- Maintain a register of alerting authorities⁷ in the form of an OID⁸.
- Specify message originators, dissemination channels, and recipients under the OID scheme.
- Categorize alerting authorities by location (typically administrative units) and event types.
- Define other constraints, rules and conventions applicable to the Country context
- Ensure the alerts, at least, make basic sense to recipients that are unaware of the profile restrictions.

2 Procedure to Register Alerting Authorities

To use the Register of Alerting Authorities⁵, a Country's WMO Permanent Representative should name a 'designated editor'—ideally a permanent DMO official—to register entries.⁹ Thereafter, The designated editor would be empowered to subsequently register all officially recognized Bhutanese hazard alert authorities.

Alerting authorities and messages can be identified by virtue of an OID tree shown in Fig 1. An OID tree is theoretically inexhaustible in depth and breath. The node '2.49.0.0' (labeled 'authority (0)' in Fig1) designates alerting authorities at various levels while the node '2.49.0.1' (labeled 'country-msg (1)' in Fig. 1) designates alert messages disseminated from or through authorities at corresponding levels.

Under these two primary nodes comes branches of the OID tree country designation. For example, an OID starting with '2.49.0.0.64' refers to a Bhutanese alerting authority and one starting with '2.49.0.1.64' refers to an alert coming from such an authority originating in Bhutan.



Figure 1: OID Tree for the Register of Authorities

In addition to the OID, a CAP alert identifier would also carry a date and a message sequence number for that date. The designation '20110601.001' encodes a date (June 1, 2011) and the message number in sequence for that date (message number one, in this example). A globally unique identifier, '2.49.0.1.64.20110601.001' can hence be assigned for any alert, in this case for the first June 1, 2011 message from Bhutan.

7 The Administrative Procedure for Registering WMO Alerting Authorities; url to document: http://www.wmo.int/pages/prog/amp/pwsp/documents/AIR_PWS-20.pdf

8 The OID standard promulgated jointly by the International Standards Organization (ISO) and ITU-T uniquely and universally identifies any object in the telecommunications or information processing world: <http://www.oid-info.com/>

9 The Official correspondence should go to the Secretary General of WMO, per standard operating procedures.

3 Dissemination Rules

The hierarchical tree structure can accommodate rules for disseminating alerts within and among organizations and government jurisdictions or across borders.

3.1 Proposed rules

- 1:** An authority may issue alerts to subordinate entities.
- 2:** An authority may transmit alerts to other authorities of equivalent rank.
- 3:** An agency must share alerts with its immediately superior authority.
- 4:** An authority may view alerts issued or received by subordinates.
- 5:** National authorities (e.g. those registered immediately under the 2.49.0.64 node in Bhutan) may share alerts across borders or with international organizations.
- 6:** Only national authorities may issue public warnings.

4 Conclusion

There are substantial benefits in registering alerting authorities using the ITU/WMO schema. The schema helps reduce the complexities of managing multiple alerting agencies within a state and of integrating with international agencies.

5 Acknowledgement

I would like to thank Eliot Christian, WIS Senior Scientific Officer, World Meteorological Organization (WMO) and Olivier Dubuisson, ITU-T ASN.1 & OID Project Leader, France Telecom - Orange for their contributions in validating the logic in this document as well as sharing their wealth of knowledge on this subject.