
International Operations Manual for PIACs of the Danube AEWS



International Operations Manual for Principal International Alert
Centres of the Danube Accident Emergency Warning System

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1 INTRODUCTION

The need of an accident emergency warning system (AEWS) in the Danube River Basin is recognized in Article 16 of the Convention on Cooperation for Protection and Sustainable Use of the Danube River (Danube River Protection Convention). Preparatory work on the AEWS was initiated under the EC PHARE Environmental Programme for the Danube River Basin, which was launched in 1991. The first stage of the Danube AEWS came into operation in April 1997. After the entry into force of the Danube River Protection Convention the operation of the AEWS became an integral part of the activities of the International Commission for the Protection of the Danube River (ICPDR).

In December 2004 the ICPDR agreed upon migration of AEWS from a satellite-based to an Internet-based information system. In December 2012 the ICPDR agreed upon an update of the AEWS based on technical necessities which also introduced improvements such as updatable reports and simplified forms. Referring to this decision the International Operation Manual had to be revised accordingly.

2 OBJECTIVES AND SET-UP OF THE DANUBE AEWS

2.1 Objectives of the Danube AEWS

The general objective of the AEWS is to increase public safety and protect the environment in the event of an accidental pollution by providing early information for potentially affected riparian countries.

In more detail the objectives of the Danube AEWS are:

- A prompt receiving, processing and transmission of information of a pollution caused by dangerous substances which entered surface waters accidentally and which may cause significant adverse transboundary impact;
- A prompt dealing with and communication of information on emergencies that may take place in the rivers of the Danube River Basin.

The system must have the capability to warn the national services in charge of handling emergencies promptly so that they can take action to:

- contain the danger;
- ascertain the cause;
- find those responsible for an accident;
- rectify the damage;
- avoid other consequences;

2.2 International AEWS Structure

All countries having the status of an ICPDR Contracting Party cooperate within the AEWS structure. Principal International Alert Centres (PIACs) in these countries are the central points of the basin-wide cooperation. The ICPDR Secretariat maintains the central basin-wide AEWS website and communication system. The activities regarding the Danube Accident Emergency Warning System are supervised by the Accident Prevention and Control (APC) Expert Group.

The Danube AEWS has a flexible structure, and may be extended in the future if necessary. At present it is used also by the International Sava River Basin Commission as the warning system for the Sava River Basin.

In the concept of the Danube AEWS each country involved has its own national AEWS, which covers the national action policy in reaction to an accidental pollution of the Danube and its tributaries. This national AEWS consists of one or more Alert Centres. The structure and operation of national AEWS is fully in competence of the country and not subject of this manual.

Within each national AEWS there are organisations and institutes, that put in place their own warning procedures (and national manuals). On top of this structure of national Alert Centres, each of the Danube riparian states has one Principal International Alert Centre (PIAC) with the exception of Ukraine which has two PIACs, one for each part of the Ukrainian DRB.

2.2.1 ICPDR Secretariat

The Convention on the Cooperation for the Protection and Sustainable Use of the Danube River (Danube River Protection Convention, DRPC) was signed on June 29, 1994, in Sofia and came into force on 22 October 1998. According to Article 18 of the DRPC the International Commission for the Protection of the Danube River (ICPDR) has been established with a view to implementing the objectives and provisions of the Convention. In accordance with the Annex IV / Article 7 of the DRPC a Permanent Secretariat has been established in Vienna. The Secretariat performs the functions that are necessary for the administration of the DRPC and for the work of the ICPDR.

The main tasks of the ICPDR Secretariat, with respect to the Danube Accident Emergency Warning System are:

- central coordination and maintenance
- updates/improvements of AEWS and related procedures
- updates of related tools and manuals
- coordination of tests
- organisation of training programmes

2.2.2 Principal International Alert Centre (PIAC)

The PIAC is the responsible operational unit in a given country in charge of all (international) communications.

A PIAC starts operating when a message about a potentially serious accident pollution event is received. Such an initial message may come from:

- the national, regional or district authorities (that is through the national AEWS) if pollution is observed in the Danube river or its tributaries within the PIAC's country borders;
- a PIAC in one of the upstream or downstream riparian states.

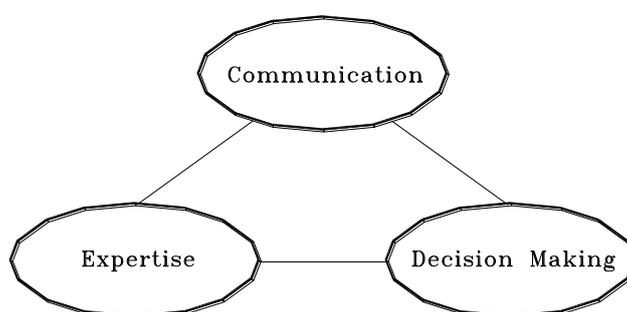
2.2.2.1 PIAC Tasks

The main tasks of the PIAC are:

- *Communication* about a reported accident pollution of the Danube river basin waters;
- *Expert involvement* to assess the effects or impact of the reported accidental pollution;
- *Decision making* on actions to be taken.

To undertake these tasks, each PIAC has three separate functional units, not necessarily in the same location or from the same organisation:

- *Communication Unit (CU)*;
- *Expert Unit (EU)*;
- *Decision making Unit (DU)*.



The full names and addresses of all institutes or organisations that are involved in the PIACs of the riparian countries, participating in the Danube AEWS, are listed on the AEWS website.

2.2.2.2 List of PIAC codes

PIAC Code	Country	Location of Communication Unit
PIAC-DE	Germany	Straubing
PIAC-AT	Austria	Vienna
PIAC-CZ	Czech Republic	Brno
PIAC-SK	Slovak Republic	Bratislava
PIAC-HU	Hungary	Budapest
PIAC-SI	Slovenia	Ljubljana
PIAC-BA	Bosnia and Herzegovina	Sarajevo
PIAC-RS	Serbia	Belgrade
PIAC-HR	Croatia	Zagreb
PIAC-RO	Romania	Bucharest
PIAC-BG	Bulgaria	Sofia
PIAC-MD	Moldova	Chisinau

PIAC-UA-Uz	Ukraine	Uzhgorod
PIAC-UA-Iz	Ukraine	Izmail

2.2.2.3 PIAC Activities

The following activities within a PIAC can be identified, once a (potential) accidental pollution has been reported:

- a. Receipt of the first report on a (potential) accidental pollution.
- b. Registration of the reported incident or pollution.
- c. Assessment of the possible impact of the reported pollution. If necessary, consultation with external experts to acquire their opinion on the possible impact of the polluting substance.
- d. Raising an alert to another PIAC by creating an incident report in the AEWS website if there is an indication of a possible transboundary impact or if the emission thresholds were exceeded.
- e. Decision on which actions, for various authority levels, are to be taken in combating the pollution and which authorities are to be informed or warned:
 - notification of national, regional and district authorities for combating the reported situation (through national AEWS);
 - initiation of national or regional alarm plans (through national AEWS).
- f. Providing follow-up information to the other PIAC by updating the incident report in the AEWS website if additional information on the pollutant substance or other details on the accident become available.
- g. Decision on whether the alert situation is over.
- h. Ending the alert by setting the "End-of-Alert" status of the incident report in the AEWS website.

To improve the international communication and the registration of all accident related information and to assist in a prompt judgement of the possible impact of reported accidents the following tools are available to the PIAC.

1. *AEWS website*

For international communication of pollution incidents and other information between Communication Units an Internet-based communication network is available (www.icpdr.org/aews).

The communication equipment required by each PIAC consists of a standard web browser connected to Internet. Mobile phone(s) with Short Message Service (SMS) functionality and a printer are also recommended. A telefax machine should be available as backup communication in case of unavailability of Internet connection.

Reports on pollution incidents and other information are entered into web forms and transmitted through the Internet. All entered information is stored and made accessible via the AEWS website. The relevant recipients are notified about new and updated information via e-mail and/or SMS messages. They can view the full information, confirm receipt and follow up via the web browser.

2. *Hazardous substances database (integrated into AEWS website)*

The Expert Unit may use a database maintained by Federal Environment Agency (Umweltbundesamt, UBA) in Germany that contains data of polluting substances. All substances already allocated to a water hazard class or classified as non-hazardous to water can be searched using the UBA's online database [Rigoletto](#) or directly within the AEWS. The substances are classified for their water-hazardous properties. Classification is carried out on the basis of the Administrative Regulation on the Classification of Substances hazardous to waters into Water Hazard Classes (Verwaltungsvorschrift wassergefährdende Stoffe (VwVwS)) of 17 May 1999. The amendment to the VwVwS of 27 July 2005 entered into force on 1 August 2005. There are three water hazard classes (WGK):

- 1: low hazard to waters
- 2: hazard to waters
- 3: severe hazard to waters

3 INTERNATIONAL WARNING PROCEDURES

3.1 General

1. The PIAC in whose country a serious water pollution of the River Danube or its tributaries is observed first, initialises the operation of the AEWS and will launch an international alert.

In general, two cases can be distinguished that initialise the operation of the AEWS.

A. An incident that may cause serious water pollution is reported to a PIAC. The source and location of the incident as well as the character and quantity of a polluting substance are identified. In this case the alert thresholds for accidental water pollution in the framework of the international Danube accident emergency warning system are applied (see Annex D).

B. A serious water pollution is observed and reported to a PIAC but the source and upstream location of the incident as well as the character and quantity of a polluting substance that has caused the incident are as yet unknown.

NOTE: *The APC EG at its meetings reiterated the necessity of a rapid activation of AEWS during accidents which helps to create confidence and avoid any suspicions of hiding facts. The reaction time between an accident and its perception by PIAC must be minimized. 24/7 PIAC operation is essential for ensuring it. An alert should be triggered whenever there exists a chance that the pollution caused by an accident could have adverse transboundary impacts even though the calculated threshold values would not be exceeded. Such approach should not be looked upon as exaggerating of pollution impacts because it provides much more transparency and mutual confidence and avoids much bigger problems of a confidence loss as a consequence of no alert triggering in case of a transboundary pollution.*

2. The PIAC that initialises the AEWS and launches the first notification message by creating an incident report gives a name to the incident. The name of the incident will be included in the subject of all further messages related to the same incident.

As an example the incident name could refer to the location or tributary of the incident or to the industry involved.

3. Every incident report must exactly follow the AEWS Standard Form in the AEWS website at all time. Only one type of Standard Form is available.

The form should be filled in using the AEWS website and is transmitted by this system via Internet. In case the telefax backup communication is used, then also the Standard Form must be used.

4. The language used within the AEWS is English.

The AEWS website offers the possibility to view and fill in the Standard Form in the national language and subsequently to translate the content automatically into any other language available in the system. The language option can be selected in the user profile.

Only the standard phrases and options of predefined lists for certain items on the Standard Form can be translated. Any "free text" or additional remarks cannot be translated automatically by the AEWS and, therefore, they shall be given in English.

5. In case of outage of Internet connection or unavailability the AEWS website, telefax backup communication can be used. Also in this case, the Standard Form must be used and be filled in in English.

However, as soon as the AEWS website can be used again, all necessary information on the accident must be inserted into the system.

6. If so desired, PIACs can communicate by telephone or using the Informal Message possibility in the AEWS and exchange information before official AEWS reports are sent.

Telephone communication can also be used, should both Internet and fax communication be temporarily not available.

7. After each major incident the PIACs should prepare a summary report, describing the kind of incident, the actions taken and other relevant activities. Such report should also include a critical evaluation of the whole procedure.

These reports must be sent to the ICPDR Secretariat in Vienna.

3.2 Description of international warning procedures

As an example, a description of international warning procedures is given below:

3.2.1 Case A: An incident is reported that may cause a serious water pollution; source and incident location as well as the character and quantity of polluting substance are known.

- A-1. The PIAC in the country the incident took place registers the incident and raises an alert by creating an **incident report with status "Warning"** in the AEWS website which launches the first notification message.

It is advised to send a first warning as soon as possible to inform downstream countries that a serious incident took place. To avoid a delay it is sufficient to fill in only **priority information** in the **Standard Form** for the incident report.

A-2. Additional **updates of the incident report** must be submitted as soon as more information on the polluting substance or on other characteristics of the incident has become available.

After these updates all items of the Standard Form should be filled in, if possible.

A-3. The PIAC sends the incident report and updates to the PIAC(s) in the downstream country or countries, according to the **routing scheme** in chapter 3.3. In the AEWS website, the recipients are automatically selected according to his scheme.

A-4. The status of the incident report has to be set to “**End-of-Alert**” when:

a. The danger has subsided; that is when a transboundary pollution is no longer expected. The activities of the PIAC in the country where the incident occurred are terminated. With respect to the given incident the AEWS is no longer in operation.

b. The pollutant plume has moved downstream and has left the country. The PIAC in this country terminates their AEWS activities with respect to the given incident.

An End-of-Alert notification message is sent to all PIACs involved in the incident.

A-5. The **PIAC in the downstream country** where the pollutant plume has moved to, takes an active role in this incident on itself. This PIAC will decide whether the pollution may still have a transboundary impact to countries further downstream.

a. If yes, the AEWS with respect to this incident remains operational and the now active PIAC continues the steps A-1 and further by creating an incident report for the same incident with status “Warning”.

b. If no, the incident is closed. The activities of this now active PIAC are then also terminated. With respect to the given incident the AEWS is no longer in operation.

A-6. Every creation or update of a report (which triggers a notification message) must be confirmed by the receiving PIAC(s). A notification about the **Confirmation** is sent to the originating PIAC.

If the originating PIAC does not receive the Confirmation within three hours, this PIAC must re-submit the message.

A-7. Each report and update must also be sent to the ICPDR Secretariat.

3.2.2 Case B: A serious water pollution is reported; source and location of the incident that has caused the pollution as well as the character and quantity of polluting substance are unknown.

B-1. The PIAC in the country where the pollution was observed registers the incident by creating an **incident report with status “Request-for-Information”** in the AEWS website to the upstream PIAC in the case it is expected, that the pollution may originate from the upstream country (proximity of the **observed** pollution to an upstream country).

When the pollution is expected to have a transboundary impact the status has to be set to “**Request-and-Warning**” so a warning is additionally sent in the downstream direction.

The **Standard Form** is used for both Request-for-Information and Request-and-Warning status.

NOTE: *To ensure a high international transparency in accident prevention and control sending the “Request-and-Warning” message should always be considered as preferred solution.*

- B-2. The PIAC sends the incident report to the PIAC(s) in the upstream and downstream direction respectively, according to the **routing scheme** in chapter 3.3. In the AEWS website, the recipients are automatically selected according to his scheme.
- B-3. The **PIAC in the upstream country** receiving the Request-for-Information message from a downstream country to which the source of the incident is unknown, should check whether the source of pollution is located in their country.
- a.** If the pollution source is located in the upstream country, the PIAC in the upstream country takes actions following the same warning procedures as described for case A. The upstream PIAC will then proceed with step A-1 and send an incident report with status “**Information**” with as much as possible information on that incident to the downstream PIAC(s), in accordance with the routing scheme in chapter 3.3.
- b.** If the pollution is also detected in the upstream country but the pollution source cannot be located, an incident report with status “**Request-for-Information**” can be sent to PIACs further upstream, in accordance with the routing scheme in chapter 3.3.
- B-4. If the source of the pollution is not located, the PIAC that originally launched the incident, remains active. This PIAC must submit additional report updates as soon as more information on the pollutant substance or other characteristics of the incident has become available.
- B-5. The status of the incident report has to be set to **End-of-Alert** when:
- a.** The danger has subsided; that is when a transboundary pollution is no longer expected. The activities of the PIAC in the country where the pollution was observed first are terminated. With respect to the given incident the AEWS is no longer in operation.
- b.** The pollutant plume has moved downstream and has left the country. The PIAC in this country terminates their AEWS activities with respect to given incident.
- An End-of-Alert notification message is sent to all PIACs involved in the incident.
- B-6. The **PIAC in the downstream country** where the pollutant plume has moved to, takes an active role in this incident on itself. This PIAC will decide whether the pollution may still have a transboundary impact to countries further downstream.
- a.** If yes, the AEWS with respect to this incident remains operational and the now active PIAC continues sending a **Warning** further downstream (steps A-1 etc.) by creating an incident report for the same incident with status “Warning”.
- b.** If no, the incident is closed. The activities of this now active PIAC are then also terminated. With respect to the given incident the AEWS is no longer in operation.
- B-7. Every creation or update of a report (which triggers a notification message) must be confirmed by the receiving PIAC(s). A notification about the **Confirmation** is sent to the originating PIAC. If the originating PIAC does not receive the Confirmation within three hours, this PIAC must re-submit the message.
- B-8. Each report and update must also be sent to the ICPDR Secretariat.

3.2.3 Informal messaging

The “**Request for Information**” message should only be used in the event that pollution has been clearly detected in a river. If there is a need to verify an information on a spill/pollution/accident in an upstream country received from public media or other sources, the upstream PIAC can be contacted by sending an **informal message** which is an alternative communication channel established within the Danube AEWS. The **informal message** triggers the same notification messages but there is a clear indication that it is not an alert and is not recorded as an accident. The advantage of the informal message compared to other communication channels is the re-use of addressees and notification addresses and the 24/7 operability of the Danube AEWS.

3.2.4 Testing of the Danube AEWS

The testing of the Danube AEWS will serve the following purposes:

- a. Check of communication lines and notification addresses (mobile phone numbers and e-mail addresses)
- b. Check of readiness and alertness of PIAC Communication Units (CU), Expert Units (EU) and Decision Units (DU)
- c. Check of persons involved
- d. Check of equipment and software

The test is to be initiated by the ICPDR Secretariat, which prepares a scenario for the test. Testing will occur on a regular basis every 6 months. The test involves all PIACs. The test involves also all CUs, EUs and DUs.

For the test, the Standard Form is used. During a test, all messages have to be clearly marked as “Test”.

The test will run from downstream to upstream following the procedure for a **Request-for-Information**, or from upstream to downstream following the procedure for a **Warning**.

The reception of the Test message has to be confirmed by the receiving PIAC by sending a Confirmation to the sending PIAC. The response time should be less than 3 hours.

If the sending PIAC does not receive the Confirmation within three hours, this PIAC must once re-submit the Test message.

When the PIAC Communication Unit receives a test message, it has to inform persons on duty within the Expert Unit and Decision Unit.

Each message should also be sent to the ICPDR Secretariat. After testing the ICPDR Secretariat will evaluate the test. An evaluation report will be sent to every PIAC.

3.3 Routing of AEWS-messages

- A **Warning** message is sent in the downstream direction.
- A **Request-for-Information** message is sent in the upstream direction.
- An **End-of-Alert** message is sent in the downstream and upstream direction, to those PIACs a **Warning** or **Request-for-Information** was received from or sent to.

- **Test** messages are routed in the same way.
- Any message is also sent to the ICPDR Secretariat.

The Routing schemes and corresponding table for sending a **Warning** in the downstream directions are:

From	To	Transboundary river
Germany	- Austria	- Danube, Inn, Salzach
Austria	- Slovak Republic - Hungary - Germany - Czech Republic - Slovenia	- Danube, Morava - Danube, Morava, Raab, Mura - Inn, Salzach - Thaya - Mura, Drava
Czech Republic	- Slovak Republic - Austria	- Morava, Thaya - Morava, Thaya
Slovak Republic	- Hungary - Czech Republic - Austria	- Danube, Morava, Ipel, Hornad, Bodrog - Morava - Morava
Hungary	- Slovak Republic - Romania - Croatia - Serbia	- Danube, Ipel - Danube - Danube, Mura, Drava - Danube, Tisza
Slovenia	- Croatia - Hungary	- Mura, Drava, Sava, Kupa - Mura, Drava
Croatia	- Hungary - Serbia - Bosnia and Herzegovina	- Mura, Drava - Danube, Sava, Drava, Bosut - Sava
Romania	- Bulgaria - Moldova - Ukraine (Izmail) - Ukraine (Uzgorod) - Hungary - Serbia	- Danube - Danube, Prut - Danube, Prut - Tisza - Mures, Cris, Somes, Tisza - Danube, Zlatica, Begej (Stari i Plovni), Tamis, Karas, Nera
Bulgaria	- Romania - Serbia	- Danube - Nisava
Moldova	- Romania - Ukraine (Izmail)	- Danube, Prut - Danube, Prut

From	To	Transboundary river
Ukraine (Izmail)	- Romania	- Danube
Ukraine (Uzgorod)	- Romania - Slovak Republic - Hungary - Moldova	- Tisza, Siret, Prut - Latorica, Uh - Tisza, Latorica - Prut
Serbia	- Romania - Bulgaria - Croatia - Bosnia and Hercegovina	- Danube - Danube, Timok - Danube - Drina
Bosnia and Herzegovina	- Serbia - Croatia	- Sava, Drina - Sava, Una

Where short flow times occur in the downstream country, the next country should also be informed.

The Routing-schemes and corresponding table for the **Request-for-Information** messages that are sent in the upstream direction is as follows:

From	To	Transboundary river
Germany	- Austria	- Inn, Salzach
Austria	- Germany - Czech Republic - Slovak Republic	- Danube, Inn, Salzach - Morava, Thaya - Morava
Czech Republic	- Austria - Slovak Republic	- Thaya - Morava
Slovak Republic	- Austria - Hungary - Czech Republic - Ukraine (Uzgorod)	- Danube, Morava - Danube, Ipel - Morava - Latorica, Uh
Hungary	- Slovak Republic - Croatia - Austria - Romania - Ukraine (Uzgorod)	- Danube, Ipel, Hornad, Bodrog - Mura, Drava - Raab - Samos, Mures, Cris - Tisza
Slovenia	- Austria	- Mura, Drava
Croatia	- Hungary	- Danube, Mura, Drava

From	To	Transboundary river
	- Slovenia - Bosnia and Herzegovina - Serbia	- Mura, Drava, Sava, Kupa - Sava, Una - Danube
Romania	- Bulgaria - Moldova - Ukraine (Izmail) - Ukraine (Uzgorod) - Serbia	- Danube - Danube, Prut - Danube - Siret, Prut, Tisza - Danube
Bulgaria	- Romania - Serbia	- Danube - Danube, Timok
Moldova	- Romania - Ukraine (Uzgorod)	- Danube, Prut - Prut
Ukraine (Izmail)	- Romania - Moldova	- Danube - Danube
Ukraine (Uzgorod)	- Romania	- Tisza
Serbia	- Hungary - Romania - Bulgaria - Croatia - Bosnia and Herzegovina	- Danube, Tisza - Danube, Zlatica, Begej (Stari i Plovni), Tamis, Karas, Nera - Nisava - Danube, Sava, Drava, Bosut - Sava, Drina
Bosnia and Herzegovina	- Serbia - Croatia	- Sava, Drina - Sava

Upstream messages only go to the first upstream country.

ANNEX A: AEWS Quickstart Reference Sheet

The current AEWS Quick Reference Sheet is available at
http://www.icpdr.org/aews/system/files/aews_quickstart_sheet.pdf.

ANNEX B: ADDRESSES OF PIACS

The current list of PIACs is available at <http://www.icpdr.org/aews/alert-centers>.

It is recommended that each PIAC keeps a hardcopy of this list to have other PIAC's fax numbers available if needed for backup communication.

ANNEX C: STANDARD AEWS FORM

The current AEWS standard form is available at <http://www.icpdr.org/aews/new/report>.

It is recommended that each PIAC keeps a print-out or PDF version of this form if needed for backup communication.

ANNEX D: ALERT THRESHOLDS FOR EXTRAORDINARY WATER POLLUTION IN THE FRAMEWORK OF THE INTERNATIONAL DANUBE ACCIDENT EMERGENCY WARNING SYSTEM

The document is available at

http://www.icpdr.org/aews/system/files/icwd133_alert_thresholds_aews.pdf.