External Interface to the Ampere Society Data

Scope
Any participant at a conference organized by Ampere Society or its subgroups is required to be member of the Ampere Society. If the person is not yet a member, the membership fee is added to the conference fee and the person automatically becomes a member for one year. We provide a data communication interface to support and simplify the implied processes.

Basic interaction
With each registration for the conference, the conference organizer requests a membership status from Ampere Society through this interface. Either the registrant is paid member, not yet paid member or not yet member. Depending on the membership status, the Ampere Society membership fee has to be added to the invoice. Upon completed registration, Ampere Society automatically receives the participant's data through the provided interface. The interface should also be used during onsite registration.

The process has two steps. First, the site of the conference organizer requests a membership status in order to determine whether or not the AMPERE membership fee should be added to the conference fee. Upon completion of the registration at the conference organizer, a second request is sent in order to register the person at AMPERE Society for this particular conference. The second step is necessary in order to avoid double charging if a person registers for several AMPERE conferences in the same year. Our server can also return the membership conditions in XML format.

Interaction details
Up to now, there are three interactions
- request membership status
- request registration
- request the membership conditions to be displayed
-request data safety statement

general message format
messages can be sent through POST Variables, or as XML fields
Common to all messages is
- the field "access header" is an identifier of the conference plus an access key, constant.
- the field "requestnumber" is a unique number chosen by the requesters to match request and reply on the requesters side.
- the field "targetURL" as in $url=$_SESSION['targetURL']; is https://www.ampere-society.org/xaccess.php
Ampere Society is prepared to process multiple requests from one or more conferences with one or more sessions in parallel. Each message sent has a unique request number copied into the reply which then can be matched between request(sent) and reply(received)

the general XML message format to be sent to our server

```xml
<message>
  <access>access header</access>                     // identifies an external server
  <op>operation specifier</op>                         // statusrequest, register, ampereconditions, datasafety
  <reqnumber>requestnumber</reqnumber>     // random or sequenced number
  <whatever> ... </whatever>                            // actual content with specifier
</message>
```

With PHP the XML message is being sent to our server as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';    // sample
$url=$_SESSION['targetURL'];                // our URL as above
$datatopost=array();
$msg='<message>< access>'.$_SESSION['accessheader'].'</access>';
$msg.='< op>operation to be performed</op>';
$msg.='<requestnumber>'.$_SESSION['requestnumber'].'</requestnumber>';
$msg.='<whatever>'.$whatever.'</whatever>';
...
$msg.='< /message>';
$datatopost['message']=$msg;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;
```

Alternatively the messages may also be sent as POST variables in a similar way

```php
operation : 1
access : access header                   // as myconference-8723890780498327423785
reqnumber : 1470133796                   // here as time()
whatever : ...
```

with PHP, this POST execution looks like

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];                // our URL
$datatopost=array();
$datatopost['access']=$_SESSION['accessheader'];
$datatopost['operation']=1;
$datatopost['requestnumber']=$_SESSION['requestnumber'];
$datatopost['whatever']=$whatever;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
```
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;

The reply is in XML as

```xml
<message>
<op>reply specifier</op>
<reqnumber> requestnumber </reqnumber>       // the same number to match the reply to the request
<whatever> ... </whatever>
</message>
```

now : **Request for membership status**
The request for membership status contains the datafields in XML format.
An optional second email address (altmail) may help finding the member.
a sample XML status request message

```xml
<message>
<access>access header</access>                      // myconference-8723890780498327423785
<op>statusrequest</op>
<reqnumber> 1470133796 </reqnumber>                 // random or sequenced number to match a reply to the request
<firstname> John </firstname>
<familiyname> Doe </familiyname>
<email> john.doe@gmail.com </email>
<declaredmember> yes/no </declaredmember>   // as 1/0 optional
<title> Dr </title>
<altmail> .. </altmail>
</message>
```

With PHP the XML message is being sent to our server as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL
$datatopost=array();
$msg='<message>< access>'.$_SESSION['accessheader'].'</access>
<op>statusrequest</op>
<requestnumber>'.$_SESSION['requestnumber'].'</requestnumber>
<title>'.$ptitle.'</title>
<first>'.$pfirst.'</first>
<familiyname>'.$pfamily.'</familiyname>
<email>'.$pemail.'</email>
if ($paltmail!='') { $msg.='<altmail>'.$paltmail.'</altmail>'; }
<member>'.$pmember.'</member>
</message>
$datatopost['message']=$msg;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;
```
Alternatively with PHP with the same variables sent as POST

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL as above

datatopost=array();
datatopost['access']=$_SESSION['accessheader'];
datatopost['statusrequest']=1;
datatopost['requestnumber']=$_SESSION['requestnumber'];
datatopost['first']=$pfirst;
datatopost['family']=$pfamily;
if ($ptitle!='') { $datatopost['title']=$ptitle; }
datatopost['email']=$pemail;
if ($paltmail!='') { $datatopost['altmail']=$paltmail; }
datatopost['pmember']=$pmember;
if ($pstudent!='') { $datatopost['student']=$pstudent; }
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;
```

The reply to the status request is in XML and looks like

```xml
<message>
  <op>MembershipStatus</op>
  <reqnumber>1470133796</reqnumber>
  <status>PaidMember or UnpaidMember or NotMember</status>
</message>
```

Now:

**Participant Registration Request**

The "register participant request" contains the datafields in XML format or as POST fields. Here we collect, but don't really need the postal address and optionally a second email address which allows matching the participant in the future.

as XML

```xml
<message>
  <access>access header</access>         // myconference-8723890780498327423785
  <op>register</op>
  <reqnumber>1470133796</reqnumber>    // random or sequenced number to match a reply to the request
  <firstname>John</firstname>
  <familyname>Doe</familyname>
  <email>john.doe@gmail.com</email>

  optional content
  <title>Dr</title>
  <street>astreet</street>
  <zip>1234</zip>
  <town>atown</town>
  <country>acountry</country>
  <altmail>..</altmail>
  <uni>..</uni>
```
With PHP the registration request as XML message is being sent to our server as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL as above

$datatopost=array();
$msg='<message><access>'.$_SESSION['accessheader'].'</access><op>register</op><requestnumber>'.$_SESSION['requestnumber'].'</requestnumber><title>'.$ptitle.'</title><first>'.$pfirst.'</first><family>'.$pfamily.'</family><email>'.$pemail.'</email>
if ($paltmail!='') { $msg.='<altmail>'.$paltmail.'</altmail>'; }
$msg.='<member>'.$pmember.'</member><uni>'.$pmember.'</uni><company>'.$pmember.'</company><institute>'.$pmember.'</institute><room>'.$pmember.'</room><street>'.$pmember.'</street><town>'.$pmember.'</town><zip>'.$pmember.'</zip><country>'.$pmember.'</country><student>'.$pmember.'</student>';//
$msg.='</message>'; $datatopost['message']=$msg;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;
```

now, the register request as POST

```
register : 1
access : access header                   // myconference-8723890780498327423785
reqnumber : 1470133796
firstname : John
familyname : Doe
date : january
email : john.doe@gmail.com
street : aroad 1
zip : 1234
town : atown
country : acountry
optional
title : Hr,Mrs or Dr or ..
alternate mail :
university :
company :
```
in PHP, the register request is executed as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL
$datatopost=array();
$datatopost['access']=$_SESSION['accessheader'];
$datatopost['operation']=1;
$datatopost['requestnumber']=$_SESSION['requestnumber'];
$datatopost['whatever']=$ptitle;
$datatopost['first']=$pfirst;
$datatopost['family']=$pfamily;
$datatopost['email']=$pemail;
$datatopost['altmail']=$paltmail;
$datatopost['pmember']=$pmember;
$datatopost['uni']=$puni;
$datatopost['company']=$pcompany;
$datatopost['institute']=$pinstitute;
$datatopost['room']=$proom;
$datatopost['street']=$pstreet;
$datatopost['town']=$ptown;
$datatopost['zip']=$pzip;
$datatopost['country']=$pcountry;
$datatopost['student']=$pstudent;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POST,sizeof($datatopost));
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
$_SESSION['curlresult']=$result;
```

The reply is also in XML and contains

```xml
<message>
  <op> registration </op>
  <reqnumber> 1470133796 </reqnumber>
  <status> registered </status>
</message>
```

where in all cases the field "access header" is a specifier of the conference plus an access key supporting requests

**membership conditions**

The Ampere Society membership conditions are constant, but may change, thus we provide them through a request. They have to be shown for the registration.

as XML

```xml
<message>
```
With PHP it is being sent to our server as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL']; // our URL

$datatopost=array();
$msg='<message><access>'.$_SESSION['accessheader'].'</access>';
$msg.='<op>requestampereconditions</op>';
$msg.='<requestnumber>'.$_SESSION['requestnumber'].'</requestnumber>';
$msg.='</message>';
$datatopost['message']=$msg;
$url = curl_init($url);
curl_setopt($url,CURLOPT_URL,$url);
curl_setopt($url,CURLOPT_POST,sizeof($datatopost));
curl_setopt($url,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($url,CURLOPT_RETURNTRANSFER,true);
curl_setopt($url,CURLOPT_TIMEOUT,10);
$result=curl_exec($url);
curl_close($url);
$_SESSION['curlresult']=$result;
```

as POST, the conditions request looks like

access header : myconference-8723890780498327423785
op : requestampereconditions
reqnumber : 1470133796

executed in PHP

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL']; // our URL

$datatopost=array();
$datatopost['access']=$_SESSION['accessheader'];
$datatopost['requestampereconditions']=1;
$datatopost['requestnumber']=$_SESSION['requestnumber'];
$url = curl_init($url);
curl_setopt($url,CURLOPT_URL,$url);
curl_setopt($url,CURLOPT_POST,sizeof($datatopost));
curl_setopt($url,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($url,CURLOPT_RETURNTRANSFER,true);
curl_setopt($url,CURLOPT_TIMEOUT,10);
$result=curl_exec($url);
curl_close($url);
$_SESSION['curlresult']=$result;
```

The sample reply to the condition request is in XML as

```xml
<message>
  <op>ampereconditions</op>
  <requestnumber>1470133796</requestnumber>
  <story>This Ampere membership lasts for the current year.</story>
</message>
```
A cancellation of an ongoing membership is not possible.
The membership does not renew automatically. You can lookup
your personal data under: <a href="www.ampere-society.org">ampere website</a>
</message>

data protection information statement
The Ampere Society data protection information are constant, but may change, thus we provide them through a request. They have to be shown for the registration

as XML
<message>
<access>access header</access>
<op>requestdatasafety</op>
<reqnumber>1470133796</reqnumber>    # random or sequenced number
</message>

With PHP it is being sent to our server as

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL
$datatopost=array();
$msg='<message><access>'.$_SESSION['accessheader'].'</access></message>
$datatopost['message']=$msg;
$curl = curl_init($url);
curl_setopt($curl,CURLOPT_URL,$url);
curl_setopt($curl,CURLOPT_POSTFIELDS,$datatopost);
curl_setopt($curl,CURLOPT_RETURNTRANSFER,true);
curl_setopt($curl,CURLOPT_TIMEOUT,10);
$result=curl_exec($curl);
curl_close($curl);
($_SESSION['curlresult']=$result;
```
as POST, the conditions request looks like

access header : myconference-8723890780498327423785
op : requestdatasafety
reqnumber : 1470133796

executed in PHP

```php
$_SESSION['requestnumber']=time();
$_SESSION['accessheader']='myconference-8723890780498327423785';
$url=$_SESSION['targetURL'];             // our URL
$datatopost=array();
$datatopost['access']=$_SESSION['accessheader'];
$datatopost['requestdatasafety']=1;
$datatopost['requestnumber']=$_SESSION['requestnumber'];
```
The sample reply to the data protection information request is in XML as
<message>
  <op> requestdatasafety </op>
  <reqnumber> 1470133796 </reqnumber>
  <story> Your personal data is treated as strictly confidential and is neither
    passed on nor sold to third parties, with the exception of the membership status
    only, that will be communicated to Ampere Congress Organizers in order for the
    Ampere member to get a discount on the registration fee.
  </story>
</message>

**task flow**

conference organizer does  registrant does  Ampere Society does

display registration page  fills in registration data

sends membership status request
with email, first name,
family name

looks up Membership status,
by first comparing the email,
then the name and first name,
replies PaidMember, UnpaidMember,
NotMember

evaluates reply as
paid member
  - > continue
else
  - > add fee

displays payment options,
cancellation rules

selects and continues
to payment

does whatever to complete
the registration sends
registration data to Ampere
Society
adds participants data to database 
in case of a new member sends 
email to participant, repeating the 
conditions and a link to the personal 
data at Ampere Society

receives welcome email, 
a link to the website and 
membership profile

**registration cancellations**
to be sent to Ampere Society by email by the conference organizer.
if the person became member through registration for this conference, we remove the non-
participant from our database

further
A testclient is at ampere-society.org/xclient.php

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