

Argo Trans

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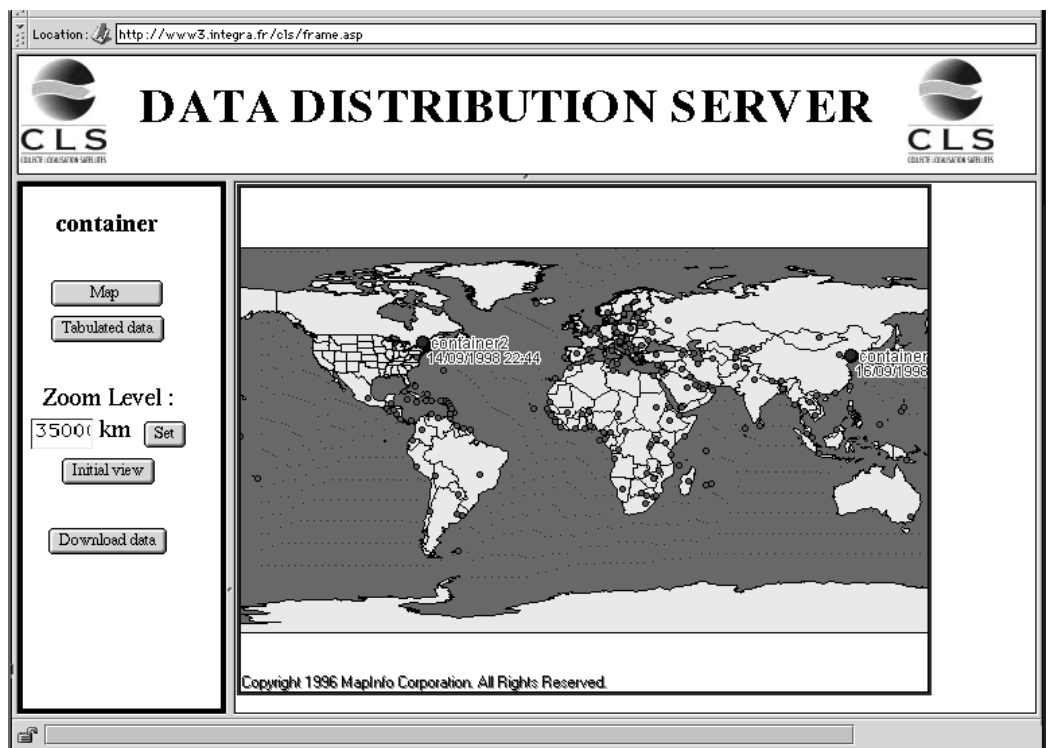
CLS exhibited at Bulk Antwerpen (June 1998)
CLS exhibits at Intermodal 1998 (Rotterdam, 1-3 Dec. 1998)

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CLS announces new WEB site for improved data access



No dedicated software required: just use your standard browser - The most simple access to Argos data - No training required - Same access for multiple offices - Data usable by other software

These are just a few of the benefits from the new CLS WEB site to access positions and sensor information. This WEB site has been designed to give our customers easy access to Argos data. In fact, the only requirement is to have a computer with WEB access, which is the case with every new desktop PC on the market today. Every customer has a unique Username and Password which

allow access to his own data. The WEB site is updated every time there is new Argos data and it always gives you the latest position and sensor data available from your transmitters. The first feature is a map with the latest position of the transmitter. It is possible to enlarge this map, to move it, to save it, and even to include it in a Word document. The transmitter is displayed as a blue circle along

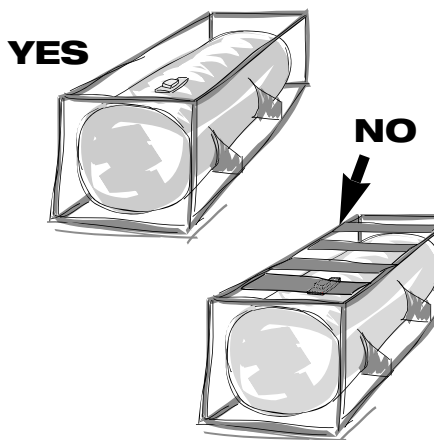
with the name of the mobile (the BIC code of a container for instance). The date and time of the position are clearly marked and shown as GMT. The second feature is to display the same information, but as a table. In this case, the position of the transmitter appears as "proximity information", for example: "10 km NE of Paris".

Continued on page 2

The best position for an antenna on a container

As for all radio systems, the antenna is the most important element to get good communication results: it is the link between the transmitter and the satellite. The better the installation of the antenna, the more messages you will receive and the more accurate the positions of the containers will be.

For container tracking, CLS provides three different antennas: the CLR, CLR-V and CLD. The CLR and CLR-V are designed for tank containers. The only difference between the two is that on the CLR-V, the antenna cable comes out of the bottom of the antenna, while on the CLR, it comes from the side.



The choice between the CLR or CLR-V depends only on the way the antenna will be installed. The CLD is to be used on dry containers or refrigerated boxes.

All three are flat antennas less than 2,5cm thick (less than one inch). Best results are obtained when they are installed horizontally, but they can also be mounted vertically.

Here are the basic things to know:

- the antenna works best when it “sees” the satellite, in other words when it has a clear view of the sky
- never put metal on the antenna (example: it should not be under a metallic walkway). However, it is possible to put plastic, PCV or polyester sheets over an antenna. This can be useful if the antenna needs to be hidden,
- if possible, there should be metal under the antenna: this helps to reflect the signal,
- the antenna must be mounted as high as possible.

Here are some good spots on various containers:

- on a tank container: a CLR-V horizontally directly on the tank or on a bracket on the frame corner,
- on a dry container: a CLD vertically on the opposite end to the door.



Two examples of CLR on tank containers



An example of CLR on a reefer container

CLS announces new WEB site for improved data access ... from page 1

DATA DISTRIBUTION SERVER

Mobile	Location	Location date	Message date	Temperature
container 1	227 km N of Lisbon	22/09/1998 05:23	21/09/1998 11:09	22,0
container 2	151 km W of Copenhagen	17/09/1998 10:11	21/09/1998 13:43	6,2
container 3	253 km W of Berlin	22/09/1998 07:26	21/09/1998 11:06	6,2
container 4	286 km W of Copenhagen	21/09/1998 09:25	21/09/1998 16:00	15,8
container 5	83 km SW of Jerusalem	19/09/1998 06:31	21/09/1998 14:58	5,7
container 6	115 km N of Jerusalem	22/09/1998 05:52	21/09/1998 11:51	27,8
container 7	54 km W of Jerusalem	12/09/1998 04:29	15/09/1998 05:06	27,3

container

Map

Tabulated data

Zoom Level: km

- add your logo on the main page,
- add your points of interest for the proximity calculation (a factory, a port, etc.). This gives you the ability to know at which point of transport your containers or railcars are located.
- display selected sensors in the unit of your choice. For instance, degrees Celsius or Fahrenheit for temperature. You can also choose to display only sensor 2 and 3 and not sensor 1.

Also, when sensor data is transmitted, it appears in clear format. Thus it is possible to see the temperature of a product, to know if an engine was ON or OFF, to check the level of a liquid, etc. The last feature is that this table is downloadable and can be used by standard spreadsheet

software like MS Excel. Thus, a history of transport can be built and reports can be generated. Also, this WEB site is customizable to meet users requirements. Here is what CLS can do:

- each Argos transmitter is identified by a unique ID code. However, the reference of the mobile,

i.e. the container or the railcar, may be more relevant to you. So you just need to tell CLS which transmitter is installed on which mobile to get a display that shows your own reference, instead of the ID code,

- display the map of your choice, for instance rail tracks,

The WEB site is located at the following address: www3.integra.fr/argosdataweb/ From there, you can have a look at live demo data even if you are not currently using Argos. Just follow the instructions.

Cheminova uses Argos to improve transport operations

Cheminova is a major Danish chemical company. The original is Cheminova Agro A/S which specializes in plant protection products. The company is a market leader for organosphosphorous insecticides.

Cheminova Agro A/S is active all over the world, with subsidiaries throughout Europe, in the US and Mexico, in Brazil and India. Worldwide activities mean that Cheminova has global transport requirements.

Global reach

In fact, the transport of about 50 main products all over the world requires the permanent attention of a dedicated staff of more than 10 people in the shipping department.

They have to manage thousands of container movements each year. These containers carry mostly liquids either in bulk form (tank containers) or drums (in dry containers).

And in most cases, the product is classified as hazardous and requires special care.

Satellite monitoring

The need for satellite monitoring arose when Cheminova bought refrigerated tank containers for a temperature sensitive product. The product is shipped at 5°C and if the refrigeration engine

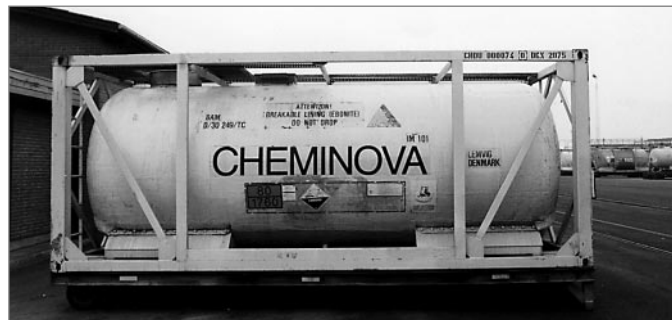
encounters a problem, a second back-up engine starts to maintain the temperature. If, for some reason, the temperature goes over 15°C, an alarm condition is triggered and measures must be taken to cool the product. In case the product gets too warm, it degrades and is finally lost.

As a member of the Responsible Care program, Cheminova is very sensitive to all environmental aspects of its activities. And, to make transport even safer, Argos is being used to monitor both position and various parameters on

status information (which reefer is on, alarm conditions...)

Does it help?

Mr. From, Manager of the Transportation Department, stresses that position information is not so important, but that temperature data is. In fact, during one of the first shipments, satellite monitoring revealed that the temperature of a product was rising steadily. Cheminova acted promptly and called the ship master. It appeared that the containers were not connected to external power! After correction, the temperature went back to normal. "The system is working so well" adds Mr. From, "that in some cases, the shipmaster even calls us to ask if the temperature or the refrigeration engine is ok!" ■



One of the Cheminova special tanks

encounters a problem, a second back-up engine starts to maintain the temperature. If, for some reason, the temperature goes over 15°C, an alarm condition is trig-

gers these special tanks. The transport department gets regular reports on these tanks, including the position of the container within 350m, the temperature of the load and

You can find more information on Cheminova on their WEB site: www.cheminova.com

On the Wild Side

Rescued by Argos

Tracking and monitoring containers is only one of the possible uses of the Argos satellite system. Another one is locating adventurers and improving safety and communications for people that are on the edge.

Argos was used to track the pro-

gress of Tori Murden, rowing the North Atlantic on Sector No Limits American Pearl. Gone from North Carolina on June 14th for Brest, France, she had 3000 nautical miles to row. Argos locations showed that Tori was rowing at an astonishing average of 28 miles a day!

Unfortunately, it seems that after Hurricane Bonnie a second Hurricane Danielle hit her on September 7th. Tori said that she was turned over 11 times and pitched once, all that in a 24-hour period. The boat itself was not badly damaged at this time but Tori thought she had broken her shoulder, as she could not raise her arm without being in great pain. As a result of these events Tori turned on her emergency Argos beacon.

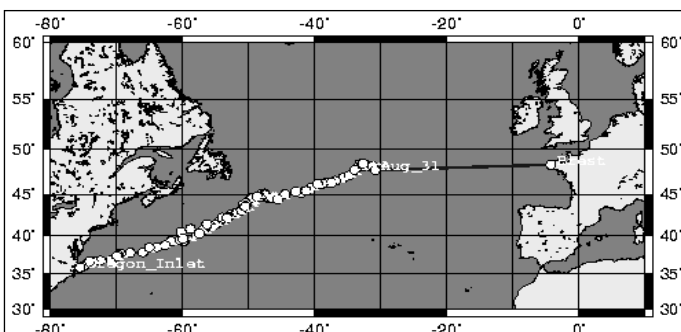
Kenneth F. Crutchlow, from the Ocean Rowing Society, confirms that "once again the Service Argos system worked perfectly well. The call from the operations



Tori Murden

room of Argos Center enables him to contact the Coast Guard in Falmouth UK who then took over coordinating to rescue Tori Murden".

Tori was the second woman, after Peggy Bouchet, to try to row an ocean solo. We guess and hope that before the end of the millenium a woman will effectively row the Atlantic Ocean. ■



The progress of Tori Murden

For more information check the WEB site: <http://www.oceanrowing.com/>

A new generation of satellites

On May 13, 1998, the new NOAA-K satellite carrying the first Argos 2 payload was successfully launched from Vandenberg Air Force Base (California, USA). NOAA-K is the first of a series of satellites to carry the Argos-2 payload. This launch is an important milestone in the constant improvement of the Argos system. The new Argos payload has been vastly improved: it has more receivers (8 instead of 4), accommodates a larger bandwidth and is more sensitive to weak signals.

How does this help?

You can find your container more often, get more temperature or other sensor recordings, and find containers stacked deeper than before.

More satellite passes

First of all, it is an additional satellite which brings the total number of satellites carrying Argos to 4. The immediate benefit is an increase in the number of satellite passes every day and a more even spread of these

passes throughout the day. The following chart summarizes the improvement over Europe:

Number of satellites	Approximate number of daily passes
2	12
3	18
4	24

So currently, it is possible to get the position of a container about 24 times a day when it is in Europe, or about an hourly fix.

Better reception under difficult conditions

A more sensitive receiver on-board the satellite means that it will be easier to pick up weak transmitter signals. This is especially important for container tracking since transmission conditions are often difficult when containers are stacked. A better reception has two effects: it will increase the number of messages received and improve position accuracy. For instance, if temperature data is transmitted, more measurements will be received. Moreover, the accuracy of an Argos position

improves as the number of received messages increases (as a reminder, the Argos system requires at least 4 messages during a satellite pass to compute a position).

More transmitters can be processed

More receivers on the satellite means that more transmitters can be received at the same time. This has two effects: first, the Argos system can now accommodate a greater number of transmitters. Second, until now, when 5 transmitters were sending a message to the satellite, one was lost since there were only 4 receivers. With 8 receivers, this cannot happen anymore, which again will improve results for every Argos user.

Currently, only one satellite carries this new payload, but all future satellites will have this improved capacity. NOAA-L will be launched in December 1999, ADEOS-2 in 1999, NOAA-M in 2001. Four additional satellites are scheduled between 2002 and 2006 which will carry a newer, improved payload, Argos 3. The next issue of ARGOTRANS will have a feature on this new payload. ■

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