

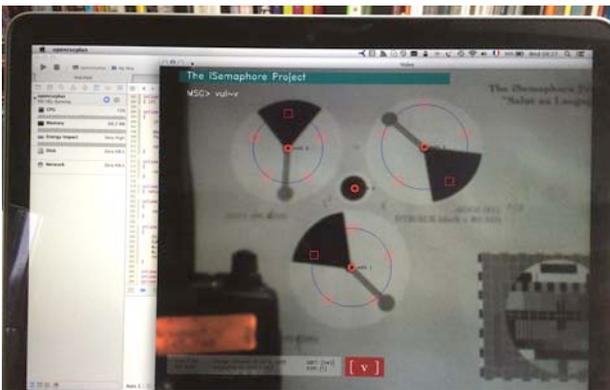


ARTIST'S JOURNAL

The final stage in the construction of the iSémaphore has been reached. The software is running and only needs a few aesthetic and practical improvements. Most of the hardware arrived last week and is ready to be assembled.



Yesterday I succeeded in hacking a 2006 design awarded Logitech Ultra Vision webcam to fit on my Canon EF 70-200mm EF USM II lens. With a 2x extender, the 1.3 MP 5mm sensor translates this camera in a huge 2800mm tele lens unit! This is needed to get a good view from the relay station to the iSémaphore, apx. 1km away.



The software struggle was the real challenge. It's been 15 years since I coded my last program (on PC). Now I had to install Xcode on my Macbook to develop the iSémaphore app. Then I had to download and install C++ and the openCV libraries for image analysis. Next I had to install Python. Add to this some API's, frameworks and SDK's to get to started. Then I had to dig into unknown C++11, openCV and Python 2.7 territory. Books and online tutorials were scarce and confusing.

The apps analyse the image, translate the optical message (generated by the mechanical iSémaphore aggregates) to Quinary (base 5-bits, cf: Baudot code). Then the iSémaphore codebook comes in to make text strings (sentences) that become a message. The iSémaphore protocol is then transformed to ASCII, ready to be coded into "dah-dit-dah" morse code and becomes an audible morse signal. The message also finds its way to Twitter where it is posted as a status change [Tweet!].

In the next weeks the gears, chains, handlebars and aggregate sign panels will be made and assembled. Finally these assembled units will be mounted on an Aluminum truss system to form the completed 6m tall iSémaphore.



HEAR THE ARTWORK AROUND THE WORLD

The Radio telegraph took over from Claude Chappe's Sémaphore network after 50 years of optical communication.

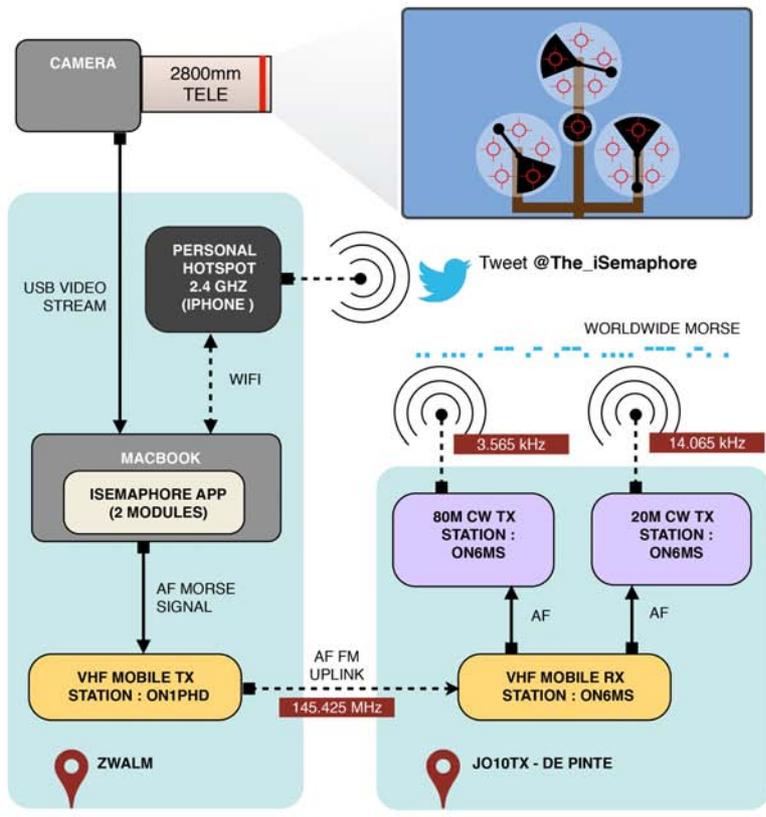
220 years after the first message was sent, I will send messages by performing with the iSémaphore installation in Zwalm, Belgium.

On April 26th everyone with a Short Wave World receiver can listen to the iSémaphore messages in morse code on:

Short Wave - SSB CW 3.565 kHz and 14.065 kHz.

On the Internet [follow us in Twitter @The_iSémaphore](#)

April 26th is also Heritage Day in Flanders, Belgium. It's worthwhile noting that Morse has been declared immaterial heritage (see link on next page).



The iSemaphore Project 2015 - Salut au Langage © Philippe Druetz

**MODULE 1
FRONT END : CALIBRATION & ANALYSIS**

- Image processing
- Control of basic image parameters
- Setup & calibration
- Conversion from optical to Quinary
- Conversion from Quinary to iSemaphore code
 - ASCII-character set
 - iSEM protocol
- Logging (on terminal)

Input: camera on USB
Output: creates message file: **iSEM_msg.txt**
Process: C++ 11 / openCV 2.4

iSEMAPHORE CODE BOOK

**MODULE 2
CODER & WRAPPER : SEND MESSAGE**

- Watchdog: detect changes in message file
- Convert plain text to ITU/extended morse code
- Handle system protocol
- Prepare message streams

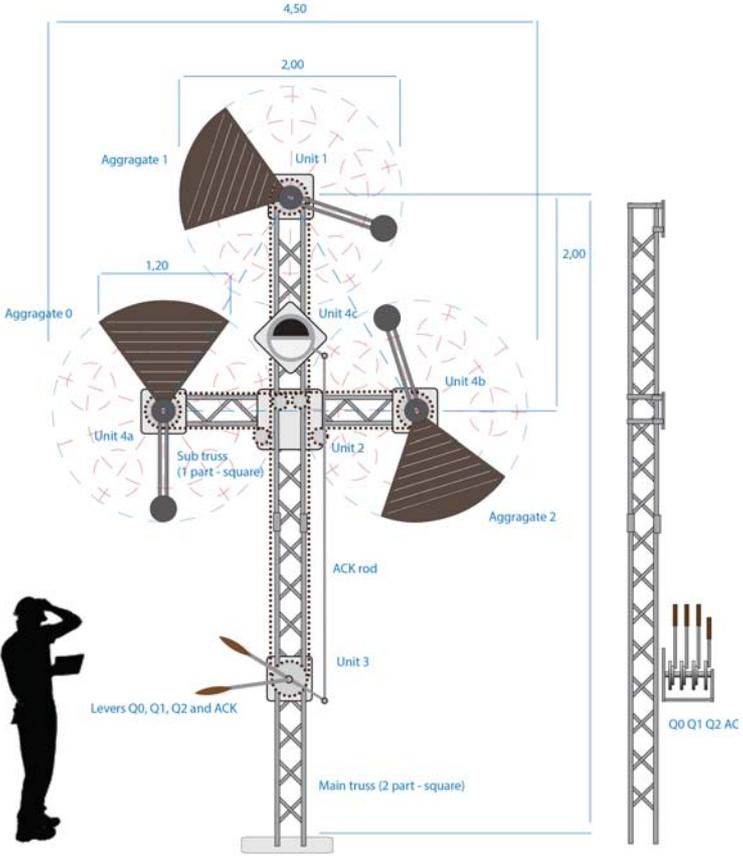
Input:

- iSEM.txt
- config file: **iSEM_cfg.xml**:
 - morse params
 - authentication tokens & secrets
 - basic settings

Output:

- live audio stream for CW (mini jack line)
- Tweet: post status change @The_iSemaphore
- Send SMS to +32495268880
- Logging: **iSEM_log.txt**

Process: Python 2.7



LINKS

- Immaterieel erfgoed**
<http://www.immaterieelerfgoed.be/Detail/wat/179>
- Morse code**
http://en.wikipedia.org/wiki/Morse_code
- UBA - Royal Belgian Amateur Radio Union**
<http://www.uba.be/en/latest/flash/isemaphore-project>
- IURI - WARD World Amateur Radio Day**
<http://www.iaru.org/world-amateur-radio-day.html>
- Academie Gent - Mixed Media**
<http://www.academiegent.be>
- ON6MS UBA-TLS De Pintre**
<http://www.tls.uba.be>
- The iSemaphore Official Page**
<http://philippedruetz.be/isemaphore/>
- Facebook page**
<https://www.facebook.com/iSemaphore>

LOTTERY FUNDED ART

Please help me realising The iSemaphore Project by buying one of 100 numbered lottery bills of € 5,00.

