



Aux membres du Conseil Académique de l'Université de Toulon

-  
Proposition d'un

'Centre International d'IA en Acoustique Naturelle'

<https://cian.lis-lab.fr>

Details : [https://sabiod.lis-lab.fr/pub/CIAN\\_UTLN\\_202403\\_CaC.pdf](https://sabiod.lis-lab.fr/pub/CIAN_UTLN_202403_CaC.pdf)



Frédéric Schneider (CERC), Hervé Glotin (LIS), Valentin Gies (IM2NP), Vincent Hugel (COSMER); et Yann Ourmières *expert marin* (MIO)

- Mise à jour du projet UTLN dans la prolongation du projet UTLN PIA4 soumis en 2022.
- Les activités de CIAN se sont confortées à l'international, regroupant ANR, FEDER, thèses etc.
- Collab. dans trois UMRs (IM2NP, LIS, MIO), et des URs (COSMER, CERC, IMSIC, IMATH...).
- CIAN draine plusieurs thèmes de recherches fédératrices et pédagogiques pour l'UTLN.
- CIAN est à la connaissance de nos partenaires un projet unique en France et à l'international.
- Pourquoi un Centre ? : stratégie pour une communication multi-échelle, régionale, nationale et internationale.
- Accroître le rayonnement de l'UTLN, et **s'affirmer** dans un contexte où la France a pris des engagements internationaux ambitieux de préservation des écosystèmes, notamment en Méditerranée (One Ocean Summit), et aux Nations Unies sur l'Océan (ONUC - 06.2025)...

Keywords :

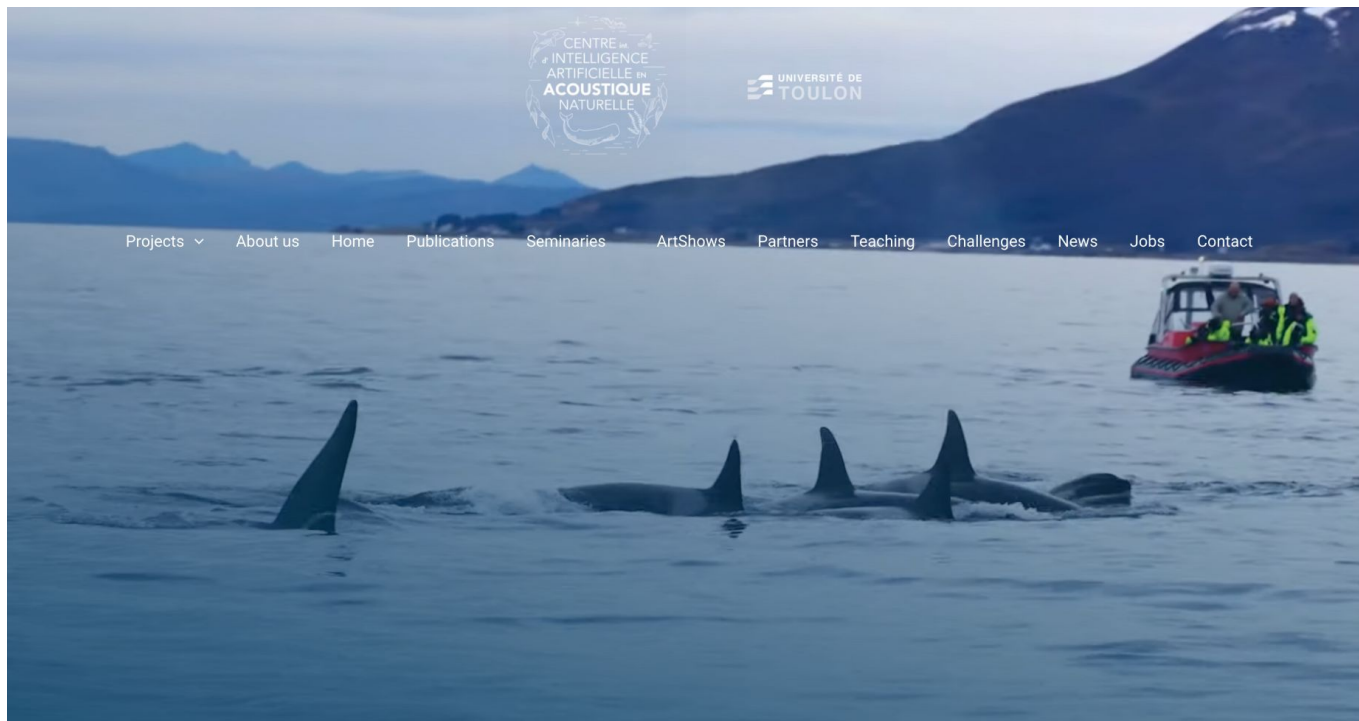
Bioacoustics, Anthropophony,

Microelectronics, Optimized arithmetic, Robotics

Low power, Semi / non / supervised representation learning, Embedded AI

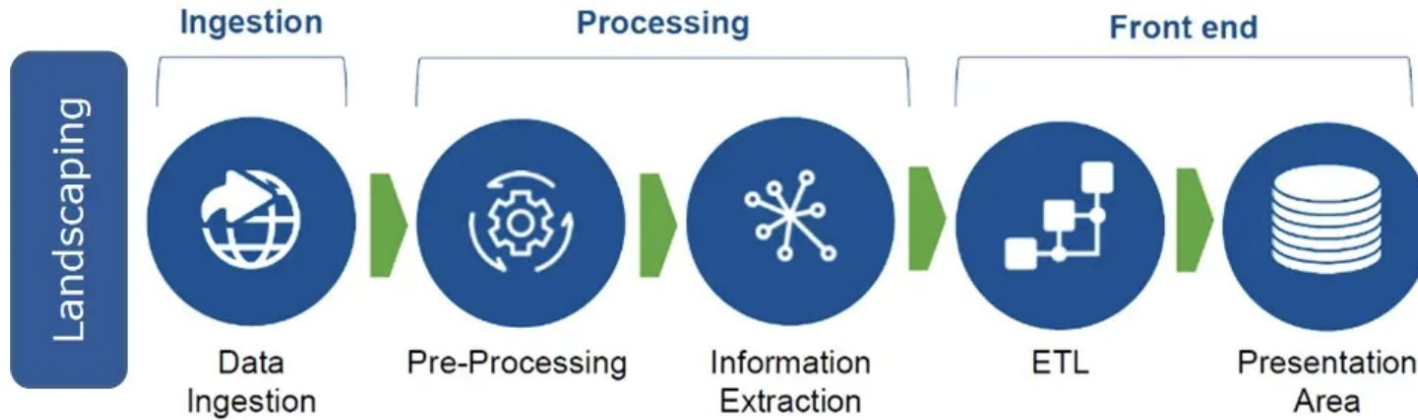
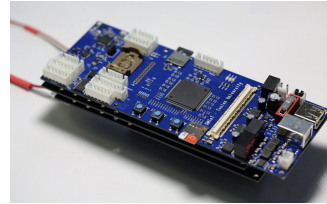
Adaptation, Biodiversity, Animal communication,

Legislation, Prevention

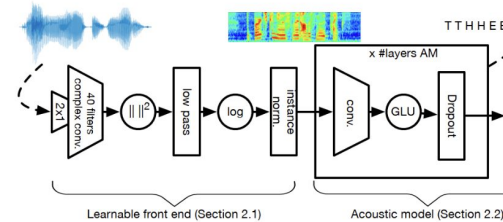
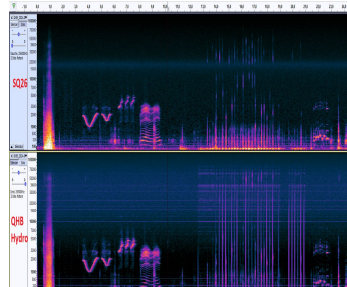


# Transversality : from sensors to decision management

## Data pipeline

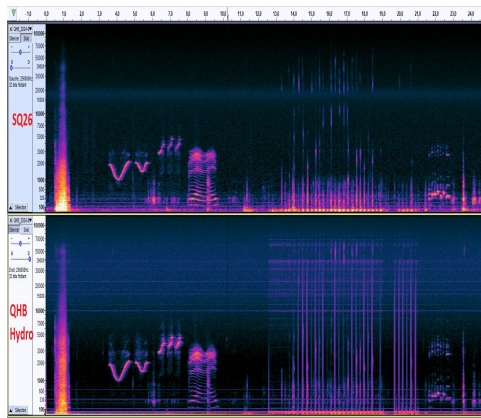


Legislation



# 8 Tasks

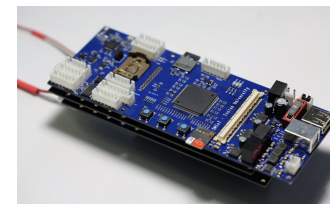
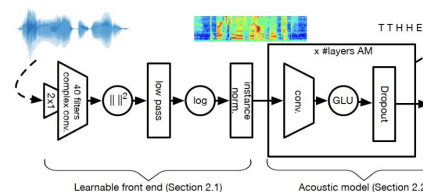
**T1) Design, build and distribute versatile scientific instrumentation**



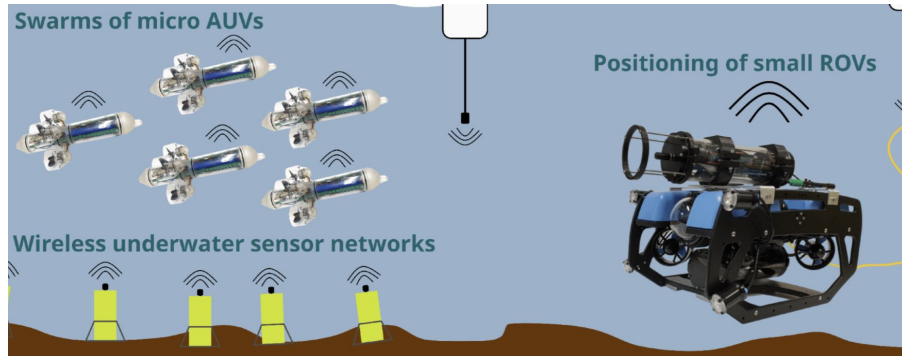
**T2) Field implementation and international community networking**



**T3) Novel algorithms in artificial intelligence, online embedded AI**



## T4) Analog and numeric communication systems



## T6) Legislation for prevention and protections Ministry of transition écologique”, Forest CA,...

## T7) Teaching : SDM, MIR, ROC,...

## T8) Scientific dissemination



# 26 Current Granted Projects in UTLN

## Generic

- A) Chaire IA ADSIL at UTLN (2021-2024)
- B) EquipEx PIA3 TERRA-FORMA
- C) PIA4 PSIBIOM 2021-2025 benefits from CIAN, with Terroiko and SI consult SAS.

## Terrestrial monitoring

- D) Canadian biodiversity large scale monitoring
- E) ANR project ULPCOCHLEA, 2022-2026
- F) ANR SYLVANIA, 2022-2026
- G) UltraBees, with Greece and CNRS, 2017-2025
- H) PIA4 Tropical forest monitoring, Green Praxis, 2021-2026
- I) Fukushima project, 2017-2027
- J) **European project BIODIVERSA TABMON, 2024 2028**

## Arts&Sciences

- AS) Arts&Sciences and large audience diffusion with Compositors, diffusions in theaters, Fete de la Sciences...
- MA) Mangrove Production with CIAN for the UNOC
- TL) Museum exposition Toulon MNHN 2023-2024
- SA) Maison de la Mer Sanary permanent expositio 2025-2035

## Marine monitoring

- K) European project BIODIVERSA EUROPAM, 2023 2027**
- L) FEDER Maritimo SeaStMar, 2024 2027**
- M) WhaleWay to monitor and interpret superpredators in Med sea, 2022-2027**
- N) Live Together cycle of missions in Med Sea and movies in Monaco TV**
- O) Mobydic, Physeter communication, 2011-2025, in Indian Ocean**
- P) Orca communication monitoring with ORCALAB, 2015-2030.**
- Q) Patagonian passive acoustic monitoring with Dyni team expedition in Chili, 2017-2026**
- R) ADAPREDAT, a pilot study of CIAN of the Interdisciplinary Mission of CNRS in Arctic**
- S) CARIMAM+ : AGOA park in Carabean cetacean study over 12 nations, 2021-2025**
- T) CPER Blue Innove de UTLN, deep sea monitoring, bioacoustic chapter, 2023-2026**
- U) MITI WedExt ‘conditions extrême’, Orsay, UTLN, IM2NP, LiS, MNHN, 2024-2026**
- V) Anthropophony group, ministry Ecology, 2019-2030**
- W) Polynesian Whale survey, 2024-2026**
- X) Hydrophin IFREMER, 2020-2025, monitoring fisheries/dolphin lethal interactions in Gasconne Golf**
- Y) Sphyrna Odyssée BIOSSA PURE Ocean 2024-2025, Brazil**
- Z) Port Cros, Cap Corse parks, Maures Reserve, Pelagos sanctuary, ZMPV SSA**



| Partners (~120) | Lab., Gov. or ONG | related Task(s) |
|-----------------|-------------------|-----------------|
|-----------------|-------------------|-----------------|

# Who ?

| <b>Researchers in Toulon (48)</b> |  |  |
|-----------------------------------|--|--|
|-----------------------------------|--|--|

|                             |          |           |
|-----------------------------|----------|-----------|
| Frédéric Schneider, MCF     | CERC     | 6-9       |
| Hervé Glotin, Pr            | LIS, IUF | 1-9       |
| Valentin Gies, Pr           | IM2NP    | 1-4,7-9   |
| Vincent Hugel, Pr           | COSMER   | 1,4,7-9   |
| Yann Ourmières, HDR         | MIO      | 2,5,7,8   |
| Hervé Barthélémy, Pr        | IM2NP    | 1,4,7-8   |
| Ricard Marxer, Pr           | LIS      | 2,3,7,8   |
| Sébastien Paris, MCF        | LIS      | 2,3,7,8   |
| Adeline Paiement, HDR       | LIS      | 2,3,7,8   |
| Joseph Razik, MCF           | LIS      | 3,4,7     |
| Pascale Giraudet, Dr        | LIS      | 2,3,5,7,8 |
| Thierry Soriano, Pr         | COSMER   | 1,3,4,7   |
| Cédric Anthierens, MCF      | COSMER   | 1,3,4,7   |
| Mathieu Richier, MCF        | COSMER   | 1,3,4,7   |
| Claire Dune, HDR            | COSMER   | 1,3,4,7   |
| Valentin Barchasz, IGR      | IM2NP    | 1,3,5,7   |
| Julien Seinturier, MCF      | LIS      | 1,2,3,4,7 |
| Laurent-Stéphane Didier, Pr | IMath    | 1,3,4,7   |
| Reza Pakzad, Pr             | IMath    | 3,7       |

## for details :

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## External partners, academics or national inst. in France (29)

|                               |                             |             |
|-------------------------------|-----------------------------|-------------|
| Stéphane Mallat, Pr           | Collège de France           | 3,4,5,7     |
| Julie Patris, MCF             | AMU, LIS                    | 1,2,3,4,6,7 |
| Bastien Mérigot, MCF          | U. Montpellier, CNRS MARBEC | 2,4,5,6,7   |
| Mark Asch, Pr                 | U. J. Verne, CNRS LAMFA     | 3,4,6,7     |
| Thierry Lengagne, CR, HDR     | CNRS LEHNA, Lyon            | 2,3,4,5,6,7 |
| Romain Garrouste, CR, HDR     | MNHN, Paris                 | 2,3,5,6,7   |
| Paul Cristini, CR, HDR        | CNRS LMA, Marseille         | 3,4,6,7     |
| Olivier Adam, Pr              | CNRS J.R.A, U. Sorbonne     | 3,4,5,6,7   |
| Frédéric Sèbe, MCF            | ENES, St Etienne, OFB       | 2,3,4,5,6,7 |
| Nicolas Mathevon, Pr          | IUF,CNRS,INSERM, StEtienne  | 1-8         |
| Amandine Gasc, CR             | IRD, IMBE, Aix-en-Pvce      | 2,4,5,6,7   |
| Isabelle Charrier, DR         | CNRS, CNPS, Orsay           | 2,5,6,7,8   |
| Vincent Bertin, DR            | CNRS CPPM, AMU              | 1,2,3,4,5   |
| Pascal Coyle, DR              | CNRS CPPM, AMU              | 1,2,3,4,5   |
| Nicolas Tomasini, Ms          | OFB, Parc Cap Corse         | 2,3,5,6,7   |
| Bazile Kinda, Dr              | SHOM                        | 2,3,5,6,7   |
| Sylvain-Pierre Galliano, IGR  | DGA, Toulon                 | 1,2,3,4,5,6 |
| Mickael Dijoux, IGR           | DGA, Toulon                 | 1,2,3,4,5,6 |
| Odile Gerard, Dr              | DGA, Toulon                 | 1,2,3,4,5,6 |
| Stéphane Jespers, Dir réserv. | DGA TN, Paris               | 1,2,3,4,5,6 |
| Alexandra Gigou, IR           | OFB PNPC                    | 2,5,6,8     |

| <b>International labs (17)</b>  |                              |             |
|---------------------------------|------------------------------|-------------|
| Cláudia Oliveira, Dr            | IMAR, Univ. of Azores        | 2,5,6,7     |
| Christine O'Sullivan, Dr        | Univ. of Jamaica             | 2,5,8       |
| Susanna Bucchan, MCF            | Univ. de Concepción, Chile   | 2,5,8       |
| Renata Sousa-Lima, Pr           | U. Fed. Rio Gde Norte, BR    | 2,3,5,6,7,8 |
| Hill Kobayashi, Dr              | Univ Tokyo, Japan            | 1-8         |
| Daisuke Shimotoku, Ing. R       | Univ Tokyo, Japan            | 1-5         |
| Elena Schall, Dr                | AWI, Germany                 | 2,5,6       |
| Sarah Manuel, IG                | Dpt Env. Nat. Res., Bermuda  | 2,5,8       |
| Alexandros Papachristoforou, Dr | APISLAB, Thessalis U., GR    | 2,5,7,8     |
| Agnese Marchini, Pr             | Univ Pavia, Italy            | 2,3,5,6,7,8 |
| Claudio Fossat, Di              | Univ Pavia, Italy            | 1,2,3,4     |
| Anouk Simard, Dr                | Ministère des forêts, Canada | 1,2,5,6,7   |
| Marie Roch, Pr                  | San Diego & Scripps, USA     | 1-8         |
| Dan Stowell, Assoc.Pr Pr        | Tilburg univ., Netherlands   | 2,3,6       |

| <b>Industrials (18)</b> |                          |         |
|-------------------------|--------------------------|---------|
| Michel Manghi           | Nauta, Italia            | 1,2,3,5 |
| Olivier Philippe, IGR   | Osean SAS, Toulon, FR    | 1,2,3,5 |
| Franck Hiermente IGR    | Osean SAS, Toulon, FR    | 1,2,3,5 |
| Fabien de Varenne, IGR  | FBV Marine SAS, Laval,FR | 1,2,3,5 |
| Martin Guillaume, IGR   | Green Praxis, FR         | 1,2,3,5 |
| Jérôme Di Giovanni, Dr  | Green Praxis, FR         | 1,2,3,5 |

| <b>Institutions / Collectivities / ONG (12+)</b> |                                    |         |  |
|--|------------------------------------|---------|--|
| François Sarano, Dr                              | ONG Longitude 181, FR              | 2,5,6,8 |  |
| Véronique Sarano, Dr                             | ONG Longitude 181, FR              | 2,5,6,8 |  |
| Cathy Lacourbas                                  | Guadeloupe, FR                     | 2,5,8   |  |
| Paul Psong Dr,<br>Helena Symonds MS              | OrcaLab, Vancouver,Canada          | 1,2,5,8 |  |
| Massimiliano Rosso,Dr                            | CIMA, Italy                        | 2,5,8   |  |
| Jean-Charles Vignals                             | Live Together, Monaco              | 2,5,8   |  |
| Philippe de Mondielli                            | Fondation Prince Albert II, Monaco | 2,5,8   |  |
| S. Viera, MS                                     | ONG Sphyrna Odyssey, FR            | 2,5,6,8 |  |
| Julie Guiderdoni                                 | Valhallab, Norway                  | 2,5,8   |  |
| Sybille Bernard, Dir                             | ONG Domaine du Rayol,FR            | 2,5,6,8 |  |
| Costanza Favilli                                 | PELAGOS, FR IT MO                  | 2,5,6,8 |  |
| Jean-Louis Etienne, Dr                           | Polar Pod ONG, FR                  | 2,5,6,8 |  |

Discussions ... :

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