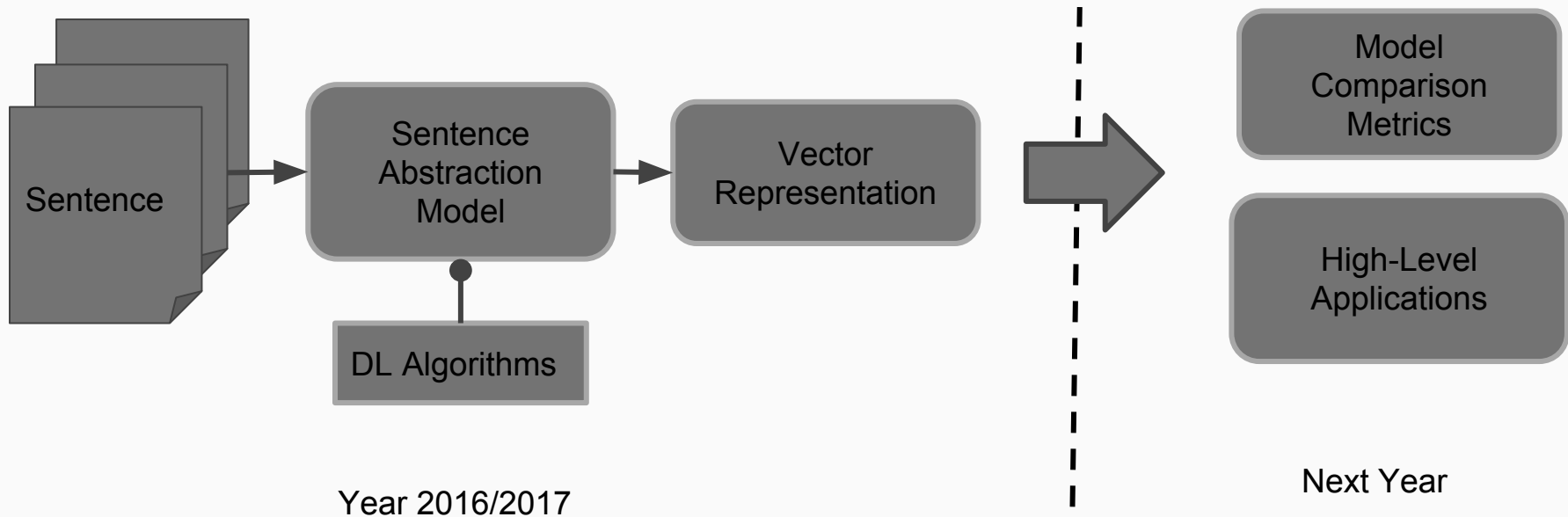


Contribution to research new models of knowledge on BigData systems



Year 2016/2017

Next Year

Contributions to multilanguage information management using Wikipedia

- STATEMENT:

To leverage Wikipedia concept-based representation alleviates the main drawbacks of the bag-of-words model

- ↑ performance

- MAIN OBJECTIVE:

To validate the suitability and benefits of using Wikipedia knowledge to improve the performance of multilanguage information management tasks such as

- Information Retrieval
- Text classification

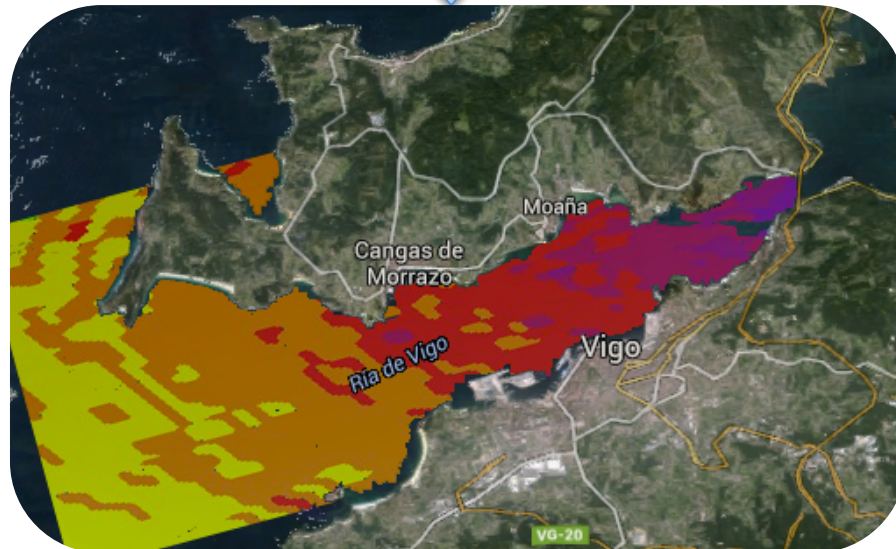


Author: Marcos Antonio Mouriño García
Advisor: Luis Anido Rifón

UNDERWATER NOISE MAPPING METHODOLOGIES FOR SHALLOW WATERS

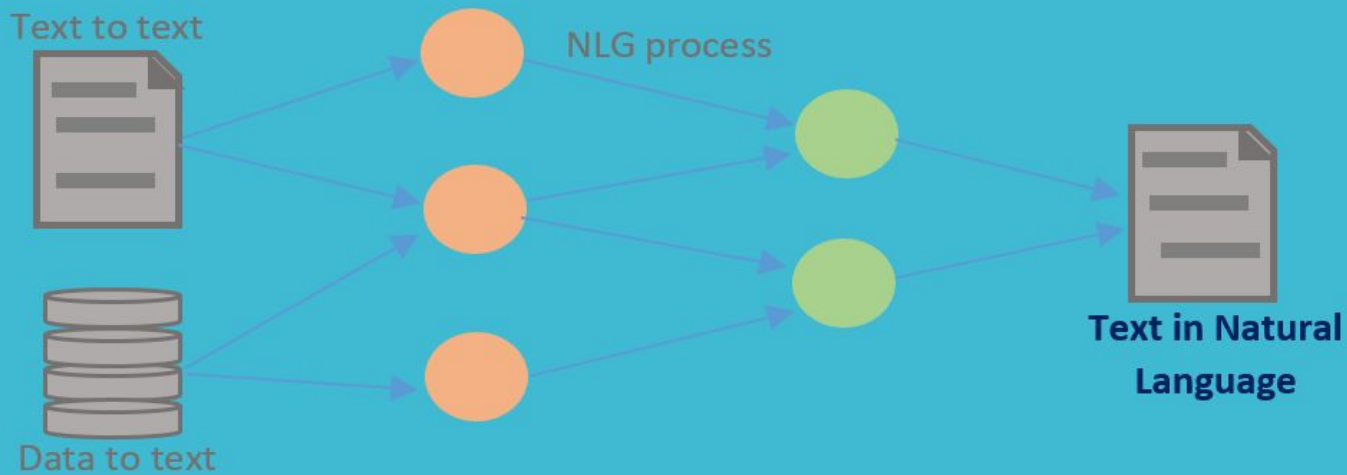
Author: David Santos-Domínguez | Thesis advisor: Soledad Torres-Guijarro | Affiliation: Sonitum (TSC, Universidad de Vigo)

- O1 Underwater noise measurement methodologies.
- O2 Propagation Losses calculation using both experimental and analytic models.
- O3 Study of underwater noise prediction software.
- O4 Classification of the different noise sources available in Ría de Vigo.
- O5 Noise map construction methodologies.
- O6 **Construction of an underwater noise map of Ría de Vigo.**



Ría de Vigo underwater noise map recreation

Contribution to Natural Language Generation for Spanish



Is it complete?

Is it coherent?

Does it have sense?

...?

**Is the generation
process automatic?**

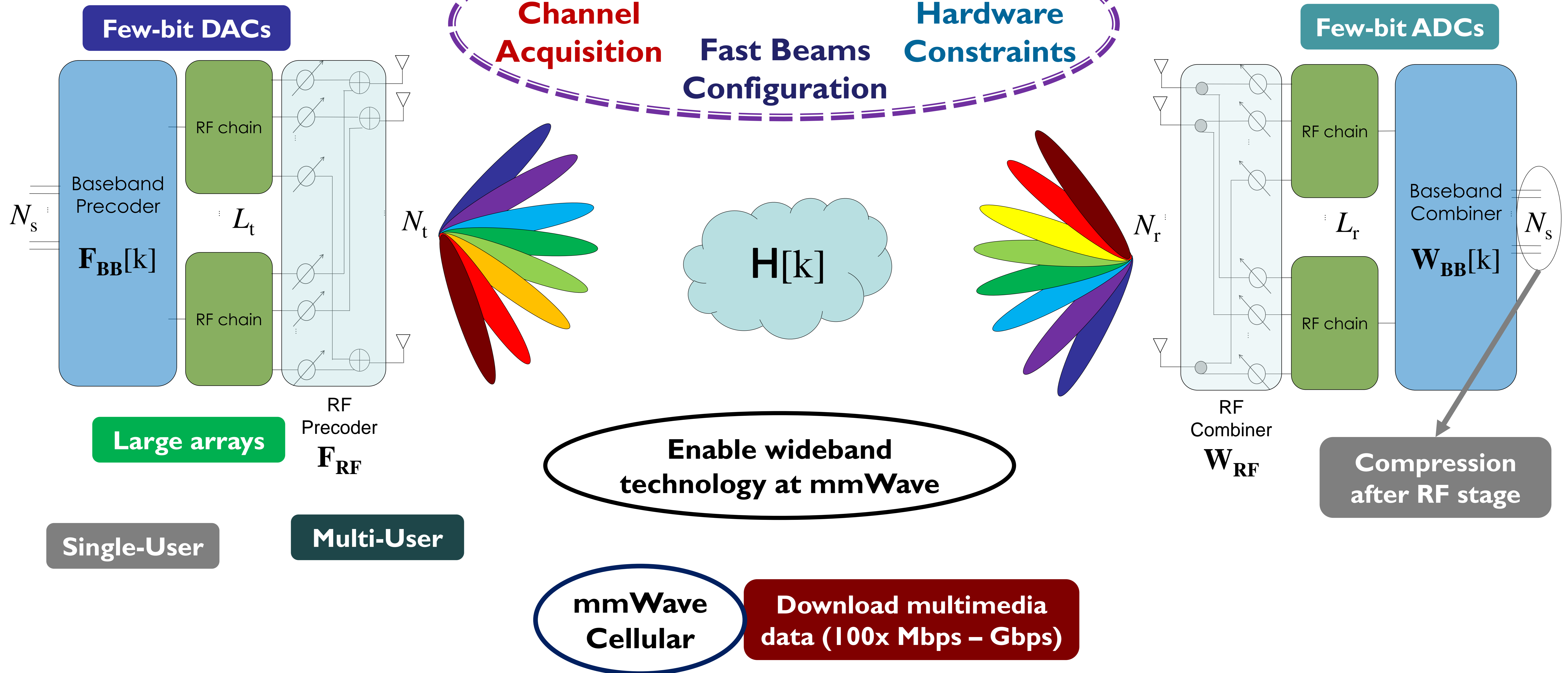
Goals

- ✓ Build a Spanish lexicon.
- 🕒 First version of an automatic Spanish NLG system based on linguistic knowledge and statistics.
 - Application of NLP techniques.
 - Test the system performance and flexibility.
 - Extending our system to English.
 - Test the Spanish and English versions within a communicator.

Silvia García Méndez

AtlantTIC Research Center for
Information & Communication Technologies

Conventional MIMO vs. mmWave MIMO

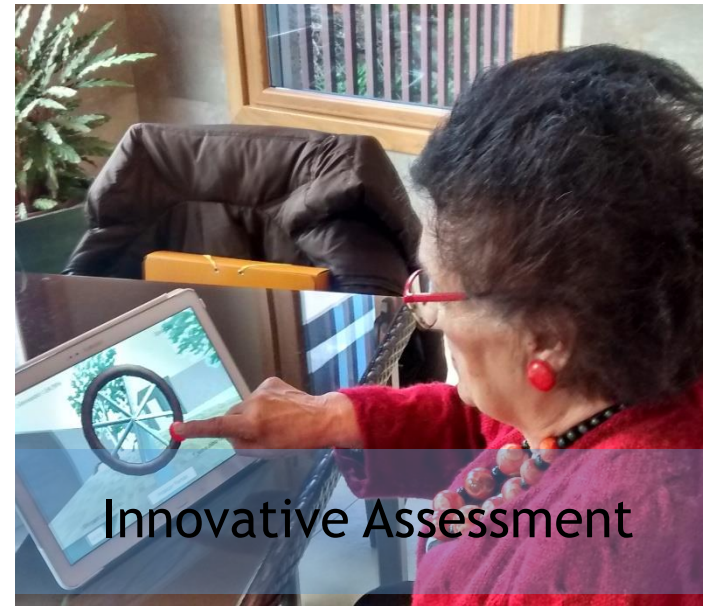


MAIN GOAL: EARLY DETECTION OF COGNITIVE IMPAIRMENT

Workshop on Monitoring
PhD Student Progress

University of Vigo, June 22-23, 2017

		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	/5
NAMING			/3
MEMORY	Read list of words, subject must repeat them. Do a recall after 5 minutes.	FACE VELVET CHURCH DAISY RED	No points
ATTENTION	Read list of digits (1 digit/sec). Subject has to repeat them in the forward order. Subject has to repeat them in the backward order.	[] 2 1 8 5 4 [] 7 4 2	/2
Read list of letters. The subject must tap with his hand at each letter A. No points if > 2 errors.		[] F B A C M N A A I K L B A F A K D E A A A J A M O F A A B	/1
Serially subtraction...		[] 8 6 4 2 0 8 6 4 2 0 8 6 4 2 0 8 6 4 2 0	/3
LANGUAGE	Repeat: I only know that John is the one to help today. The cat always hid under the couch when dogs were in the room.	[] []	/2
Fluency / Name maximum number of words in one minute that begin with the letter F.		[] [] (N: 11 words)	/1



EARLY DETECTION OF COGNITIVE IMPAIRMENT THROUGH GAMIFICATION, MACHINE LEARNING TECHNIQUES AND ICT TOOLS

Traditional Assessment Innovative Assessment



GAME DATA
UNITY



GAME ANALYTICS
LR, CART, SVM, RF...



Author:

Sonia M^a Valladares Rodríguez (soniavr@det.uvigo.es)

Advisors:

Luis Anido Rifón (Full Professor)

J. Manuel Fernández Iglesias (Associate Professor)

Tonal and Harmonic Source Localization using Acoustic Vector Sensors

Universidade de Vigo

David Pérez Cabo, Microflow AVISA, cabo@microflow.com

Advisors: Manuel A. Sobreira Seoane, Universidade de Vigo, msobre@gts.uvigo.es

Hans Elias de Bree, Microflow AVISA, debree@microflow.com



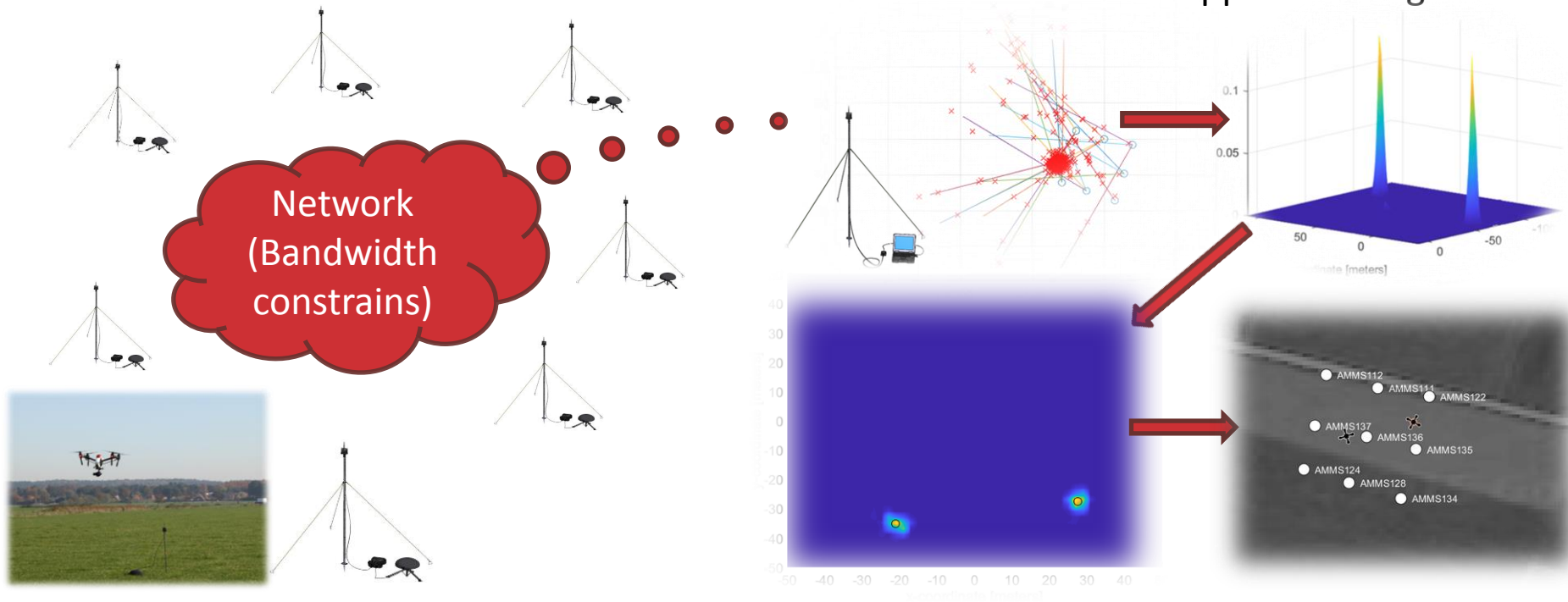
2017 WORKSHOP ON MONITORING PHD STUDENT PROGRESS, VIGO

Distributed signal processing:

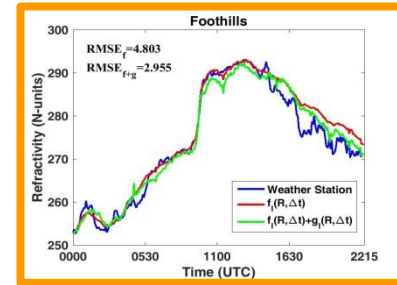
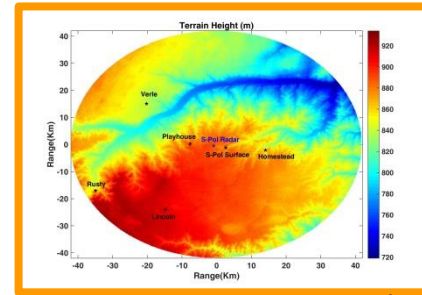
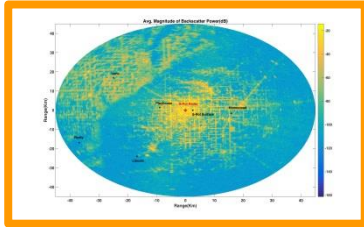
- Directional information
- Feature extraction
- NS-BASS ?
- Data compression

Centralized source tracking:

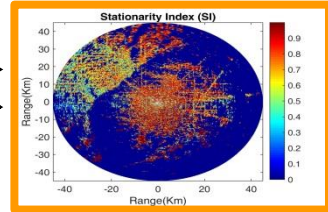
- Unknown and time-varying number of sources
- Non-linear problem
- Non-stationary problem
- RFS + PF + Doppler-Bearing Fusion



ESTIMATION OF THE ATMOSPHERIC REFRACTIVITY FROM WEATHER RADAR DATA



(I, Q)



$$SI = \frac{1}{(S-1)M} \left| \sum_{l=1}^{S-1} \sum_{k=1}^M e^{j\{\phi_{l,k} - \phi_{l-L,k}\}} \right|$$

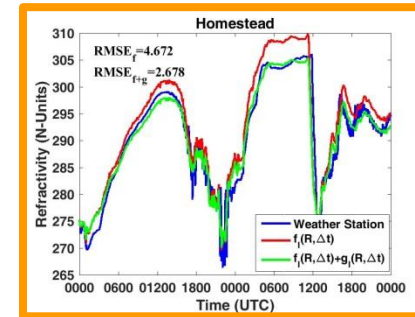
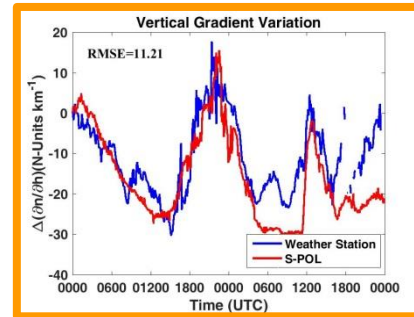
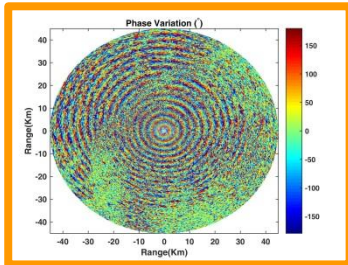
$$\phi(t) = -\frac{4\pi f}{c} \int_0^{R(t)} \left[n(h_{R,t}) + \frac{\partial n(h_{R,t})}{\partial h} (h(r',t) - h_R) \right] dr'$$

R(t)

h(r,t)

Flat

Mountainous



STUDY OF THE UNCERTAINTY AND ITS MINIMIZATION IN THE MEASUREMENTS OF ANTENNA GAIN IN FAR-FIELD CONDITIONS

Telecommunication services require **precise measurements** of antenna parameters

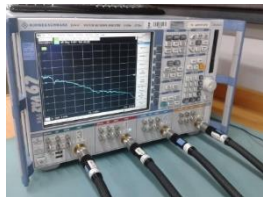
$$\text{TRUE VALUE} = \text{MEASUREMENT RESULT} \pm \text{UNCERTAINTY}$$

Reliability of measurements
Comparison with others.

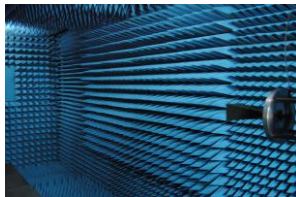
Globally accepted measurement procedures but **no standard for uncertainty**

Uncertainty factors

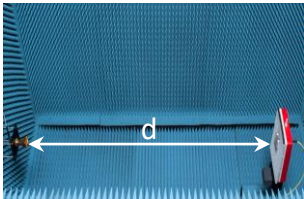
Instrumentation



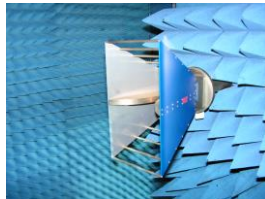
Facility



Measurement method



Device under test



Others

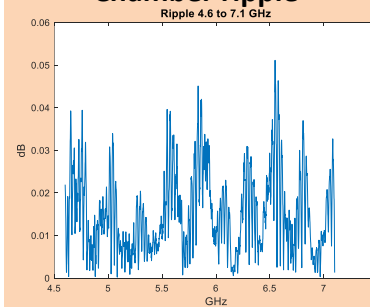
Uncertainty computation

Datasheet/calibration certificates

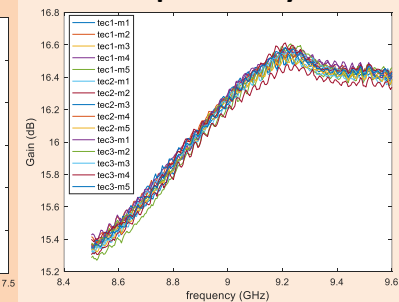
Formulation

Measurements

Chamber ripple



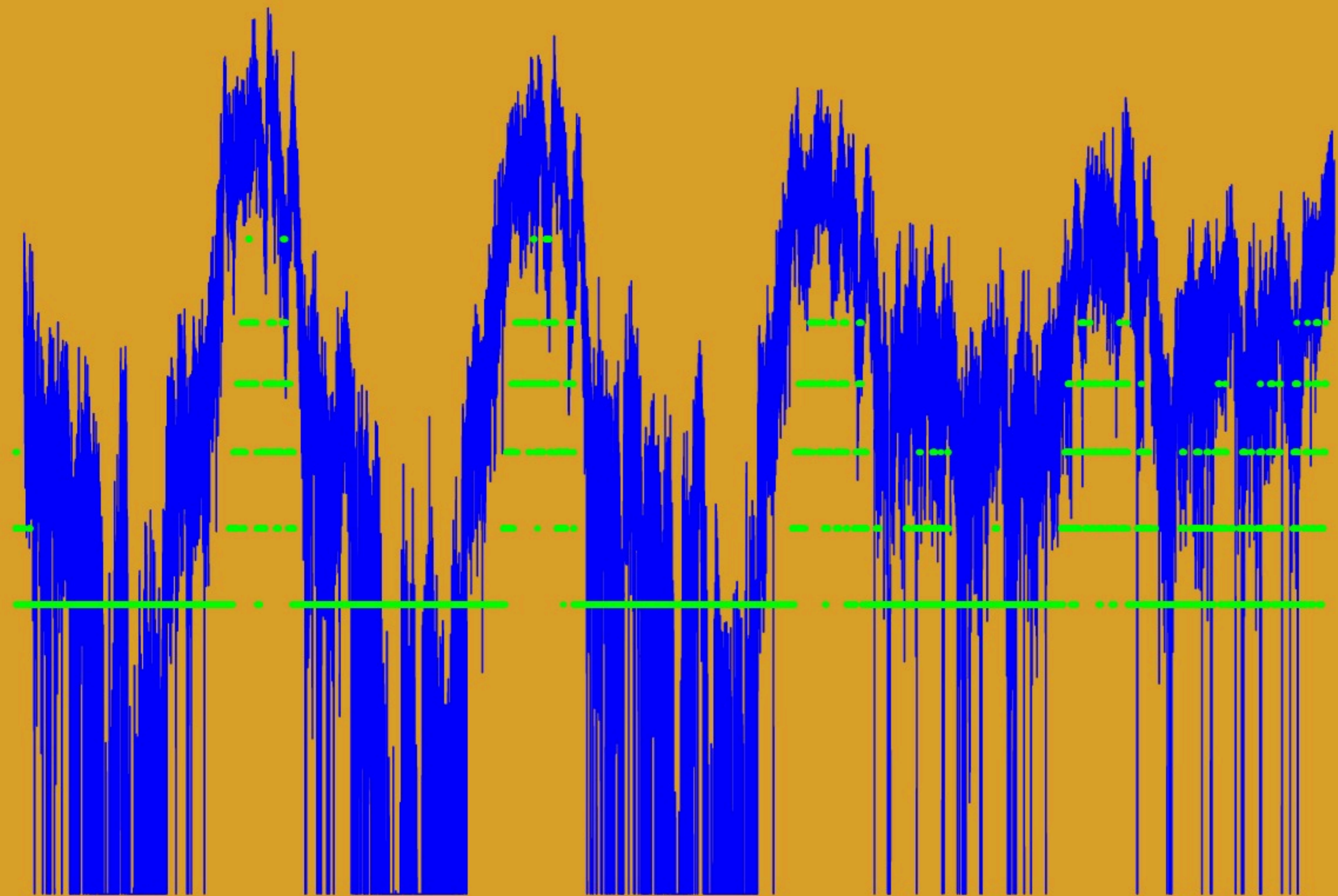
Repeatability



Application of Programmable Radios to Adaptive Communications

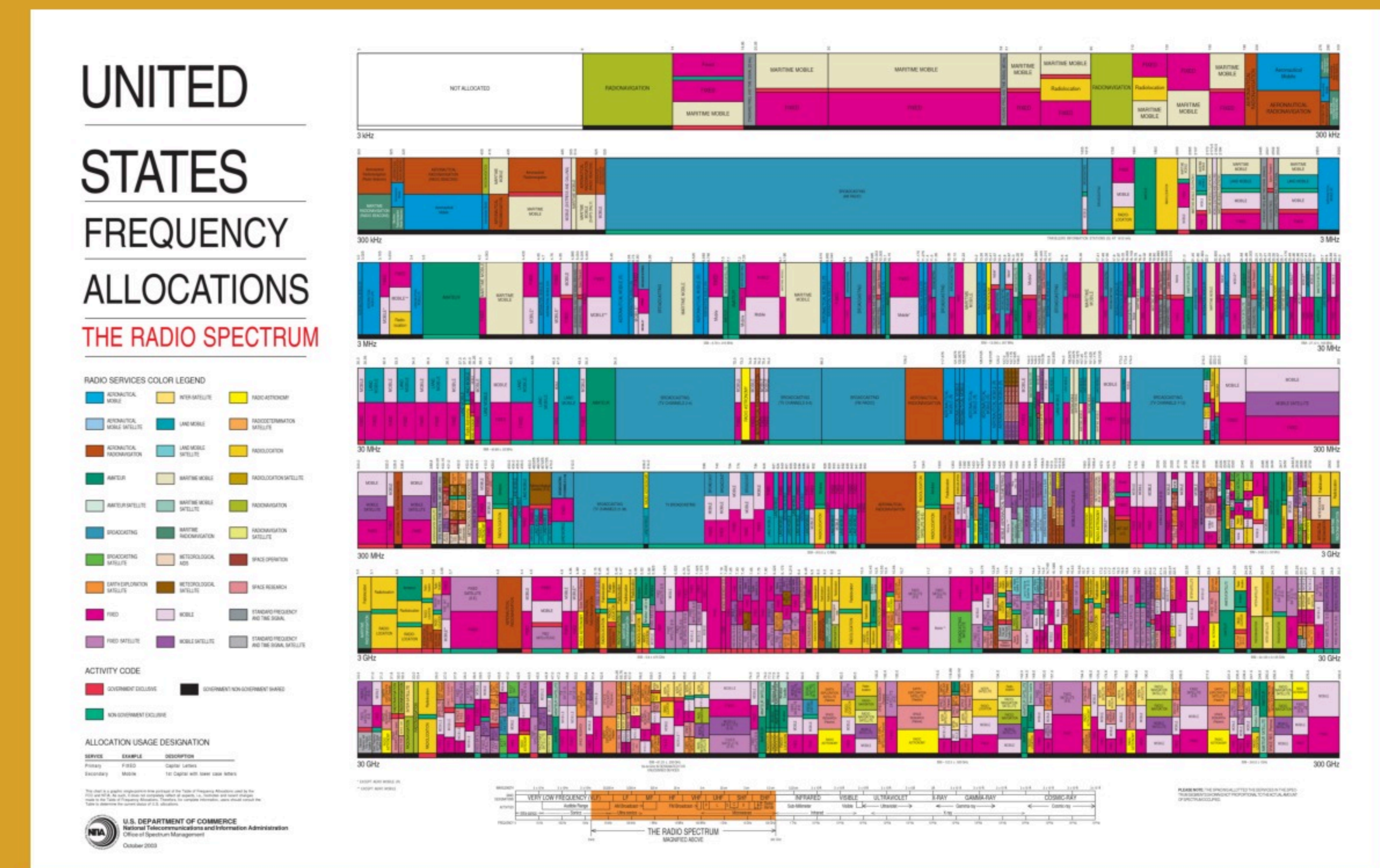
Anxo Tato Arias

Adaptation to environment



**Link
adaptation
algorithms**

Best use of spectrum



Software Defined Radios