

2nd DESIREE 360° Breast Cancer Workshop

12.07.19, San Sebastian, Spain

Relevant Outcomes on Big Data and Decision Support Systems for Cancer Management

After the successful organization of the 360o Breast Cancer Workshop in Paris in March 2019, a second Workshop - with similar objectives but with wider scope - took place in **San Sebastian on 12 July 2019**. In view of the results of the **DESIREE Project**, a Horizon 2020 EU funded project on primary BC management, the Workshop demonstrated the **latest advances** regarding clinical decision support systems (CDSS) and Big Data for oncology as well as the **future perspectives**.

Experts from the clinical and engineering arenas, from the DESIREE Consortium but also well beyond, presented advances on decision support systems, image analysis, computational modelling, as well as the clinical perspectives on the use of such systems and different related initiatives at local and international level on CDSS and Big Data for oncology. The demonstration of state-of-the-art technology by experts to an audience of interest & interrelation, to people who represent the blocks in the health technology chain, contributed to a very dynamic event!

The Workshop

The initiative and organization of this ambitious Workshop belongs to the Spanish partners of the [DESIREE Project Consortium](#), [Vicomtech](#) (DESIREE Project Coordinator) and [ONKOLOGIKOA cancer center](#), which hosted the event in its Hospital Amphitheater. With the **objective** to showcase the DESIREE end project technological outcomes, experiences & perspectives, they brought together:

- **Clinicians** from the field of oncology, including members of different tumor boards (breast, head & neck...)
- **Researchers** on the field of data analytics, Big Data, image analysis, computational modelling and artificial intelligence in the medical field,
- **Industry representatives** from the IT, pharma and biomedical fields interested in incorporating these innovations in their future products or services,
- **Hospital managers** and **public policy makers** willing to know the benefits of these innovations for the public health system
- **DESIREE Project Consortium members**
- Other participants (e.g. Physicians, Nurses)



Dr. Ivan Macia, DESIREE Project Coordinator, Vicomtech, Spain, and Dr. Ander Urrutikoetxea, General Manager, Onkologikoa, Spain, presenting during the Workshop.

The Workshop followed a three-fold thematic approach:

- **Session 1** - DESIREE Technology Highlights and Results
- **Session 2** - Clinical and Patient Perspectives
- **Session 3** - Relevant Initiatives on Big Data and DSS for Oncology

The day opened with the DESIREE project in focus (**Session 1**), highlighting the technologies, the platforms and key results of DESIREE, as presented by Consortium members.

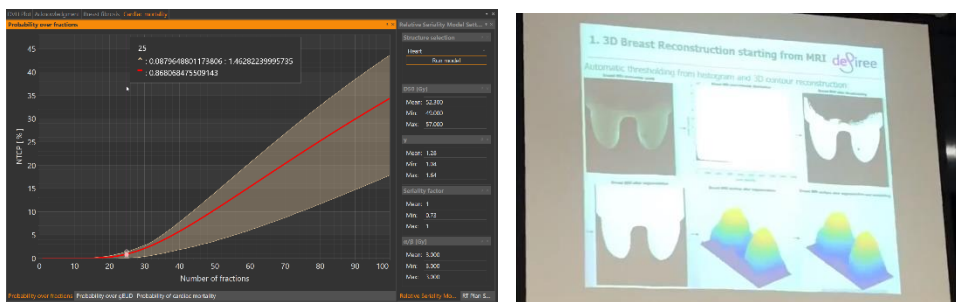
Bryan Scotney from Ulster University (UK) presented the **"Advances in Medical Image Analysis and Machine Learning for Segmentation and Classification of Breast Tissue and Tumours"** while **Alejandra Pérez Sastre** from Sistemas Genómicos (Spain) talked about the **"Advances in NGS Analysis - GeneSystems Platform"**.

The USA partner, Houston Methodist Research Institute, specializes on **"Multiscale model Aesthetic outcomes prediction"**. **Marc Garbey**, HMRI (USA) joined the Workshop remotely, and presented their innovative approach to modelling the outcomes of BC surgery. Moreover, **Ilias Sachpazidis** from Medical Innovation & Technology (Greece) discussed the topic of **"Radiobiological modelling: assessment of radiation induced toxicities"**, demonstrating the developed application.

The Session 1 was concluded with the presentation of **Naiara Muro**, from Vicomtech (Spain), titled **"DESIREE Clinical Decision Support: guideline-based, case-based and experience based DSS, visual analytics"**, followed by a **DEMO** of the DESIREE platform by **Amaia Ugarriza**, representing Bilbomática (Spain).



Bryan Scotney, Alejandra Pérez Sastre and Naiara Muro presenting during Session 1, at the DESIREE Workshop.



The Breast Cancer Radiobiological Plan Evaluator (MIT) and the 3D Breast reconstruction approach (HMRI), as presented at the Workshop.

The presentations of the **2nd Session** were selected to reveal the Clinical and Patient Perspectives in Cancer management. The first presentation of the Session discussed the **"Complexity of Clinical Decisions in Breast Units: role of Decision Support Systems"**, as presented by **Brigitte Seroussi** from INSERM / Assistance Publique Hopitaux Paris (France). **Sylvia Pelayo**, representing as well INSERM (France) analysed the **"Validation of DSS Systems for Oncology. The DESIREE approach"**. **Ander Urrutikoetxea**, Onkologikoa (Spain), set the patient perspective with his presentation **"Incorporation of the patient in the decisional process and use of PROMs"**, followed by **Isabel Álvarez** from Hospital Universitario Donostia/Biodonostia, who talked about the **"Experiences in Health Outcomes Measurement of patients with cancer"**.



Brigitte Seroussi, Sylvia Pelayo, Ander Urrutikoetxea and Isabel Álvarez during their presentations at Session 2.

The last part of the Workshop (**Session 3**) gave floor to approaches, results and experiences from other related projects on Big Data and DSS for Oncology at the regional, national and international level. To this end, **María del Mar Vivanco** (CIC-bioGune) and **Alba Garín-Muga** (Vicomtech) presented the **“Project NUBIA - Quantification of novel breast cancer biomarkers via pathology image analysis.”** The Horizon 2020 project **“Big Medilytics – Improving Healthcare in Europe through Big Data”** was presented by **Alexandra Muñoz**, INCLIVA (Valencia).

Moreover, two other Horizon 2020 projects, **“NeverMind – Mental Health Support in Cancer”** and **“Project BD2DECIDE – Decision Support System for Head and Neck Cancer”** were presented by **Manuel Ottaviano** (Universidad Politécnica de Madrid).



María del Mar Vivanco, Alexandra Muñoz and Manuel Ottaviano presenting their projects.



Other photo highlights from the DESIREE Workshop.

Significance & Results

Both the variety & innovation profile of the technologies highlighted, as well as the synergies identified among participants created a very dynamic and tangible statement of progress in cancer management. Outcomes from current research are empowering physicians but primarily the patients, who are the key beneficiaries of this effort.

Results of the DESIREE 360o Workshop “Relevant Outcomes on Big Data and Decision Support Systems for Cancer Management” at a glance:

- DESIREE decision-support system demonstrated and exposed to a wide, cross-functional audience of experts which included end-user clinicians, members or responsible of tumor boards
- Mutually beneficial exchange and lobbying between all participating stakeholders
- Experience exchange on big data management, precision medicine, clinical decision-making practices and DSS, breast cancer management, personalized treatment patient reported outcomes and patient empowerment
- Exchange and alliances with other EU-funded projects ([Big Medilytics](#), NUBIA, [NeverMind](#), [BD2DECIDE](#)).

About DESIREE Project

The DESIREE project aims to provide a web-based software ecosystem for the personalized, collaborative and multidisciplinary management of primary breast cancer by specialized Breast Units (BUs), from diagnosis to therapy and follow-up. DESIREE will help BC clinicians in their decision-making process, with technology that includes advanced clinical decision support systems (based on formalized clinical guidelines, knowledge discovery, and case-based reasoning), image-based breast and tumour characterization tools and predictive modeling for 3D breast reconstruction.

DESIREE project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 690238.

For more information, please visit <http://desiree-project.eu> or https://twitter.com/desiree_project.

