WINTEX project : Weaving innovation among academia and industry in the Tunisian textile sector

WINTEX biannual Newsletter

PROGRESS IN THE CREATION OF THE SFAX UNIVERSITY INNOVATION TEXTILE CENTER

By Dr. Amine Haj Taib (Sfax University)

WINTEX project seeks to provide the Tunisian textile sector with a push toward more added value products or advanced textiles. This will be done with the setting up of 3 innovation textiles' centers that aim to become innovation catalysts cornerstones.

The innovation center is more an approach to encourage innovation, entrepreneurship, successful business development, and community revitalization, for sure, but also ensure a local economy that generates wealth and shares prosperity.

The strategic direction of the Sfax University innovation Center is digitalization textile and clothing design. The selection of this strategy is due to:

- The need of the new economic tendency based on digitalization, simulation and mass-customization with products that are easily personalized or customizable offer an opportunity to create a deeper emotional bonding between the user and the product. Through customization, the user can create personal meanings and form attachments to products. Mass customization uses fast, flexible digital manufacturing technologies and computer-aided design. The idea is to satisfy both the manufacturers' and the individual user's needs in global, fragmented markets. Traditionally, the mass-customization concept offers the user a platform including a range of choices in styles and colors to create a personal look.
- The needs of the textile clothing industry in the Sfax region to reduce design time and for more sustainability.

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The selected equipment to be purchased is the following:

•Cabin of 3D body scanner + fabric scanner: to have more precise body measures for a better garment fit, and to focus customized and personalized garments.

•3D Simulation software: to simulated the clothing design model on virtual mannequin.

•Sublimation Printing machine : to design new graphics and realize new graphic patterns matching the tendency

•Digital embroidery machine : to design and realize embroidered crafts on fabrics

•Automatic Knitting flat machine with software: to design and realize new flat knit structures

•Digital printing machine on t-shirt : : to design and realize new graphic design on fabric

•3D printer with 3D Printing/CNC Carving/Laser Engraving solutions : to design and realize cloth furniture

•C02 Laser engraving cutting machine : to design graphic pattern on flexible materials.

The innovation textile center of the University of Sfax will involve a Multidisciplinary team which is a fusion of:

- Textile clothing industry cluster development strategy in the Sfax and south Tunisian region,
- Entrepreneurship strategy,
- Arts, culture and design strategy
- Environmental sustainability strategy,

This innovation center will be located at the Higher Institute of Art and Craft of Sfax (ISAMS), an institute included in the University of Sfax.

Finally, to resume the general objectives of the chosen digitalization textile and clothing design direction, this innovation center will aims:

- To reduce design time by 3 D simulation,
- To reduce raw materials and products consumption to meet the sustainability principles and standards.
- To be more reactive and more competitive (Fashion and textile designers and industrials)
- To foster participation of students in innovation with real case studies and to actively participate in traineeships.
- To develop students' skills and competences that are needed by the market.

The tender procedure was launched according to the following deadlines:

Ministère de l'enseignement supérieur et de la recherche scientifique
Université de Sfax

Avis de marchés publics

Date : 15 Avril 2021

Acheteur public : l'Université de Sfax

Au profit de l'Institut Supérieur des Arts et Métiers de Sfax

Objet des appels d'offres	Délai d'exécution	Mode de passation	Financement	Les dates prévues			
				Annonce de l'AO	Ouverture des offres	Publication du résultat	Exécution
Acquisition d'équipements informatiques	120 Jours	Appels d'offres nationaux	Projet Wintex-Erasmus	21/04/2021	21/05/2021	21/06/2021	28/06/2021
Acquisition d'équipements scientifiques							

LATEST NEWS

SET UP OF AN EXTERNAL QUALITY AND EVALUATION COMMITTEE (EQEC)

By Maya DIMITRIADOU from CRETHIDEV

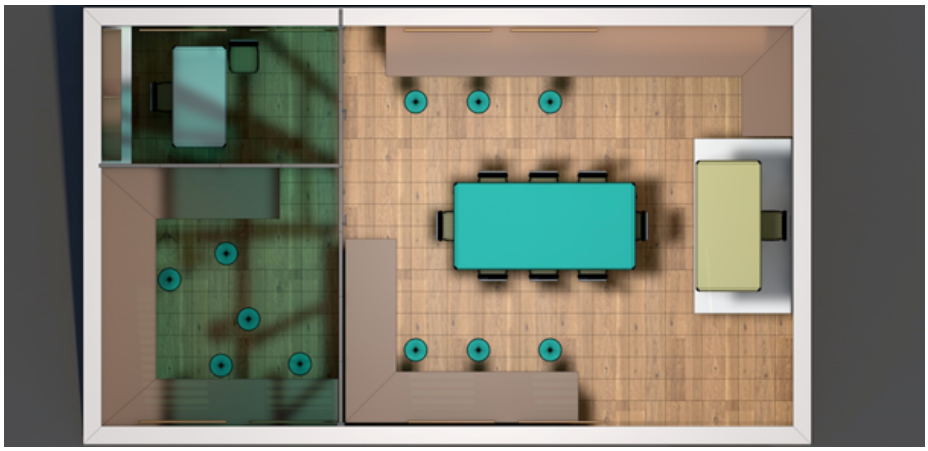
At the end of April 2021, the External Quality and Evaluation Committee (EQEC) for WINTEX project was set up. The purpose of the EQEC is to ensure a neutral review and a consistency assessment of the project deliverables versus project objectives and target groups' needs/expectations, by performing the External Quality Assessment of the project. This includes the constructive yearly ex-post evaluation of the project implementation, outputs and deliverables with tools such as interviews, questionnaires and other suitable means, with a focus on the project's implementation in Tunisia and notably the establishment of the three Innovation Centers at ISAM of Sfax (University of Sfax),ISET Ksar Hellal, and ISMM (University of Monastir). The EQEC consists of four members, three from Tunisia and one from EU who is also the coordinator of the EQEC. The members were selected after an open call that was launched by CRETHIDEV, partner of WINTEX project and are: a) Mr. Mohamed Bornaz, Textile Engineer, Manager of M B Consulting, a training, assistance, support and expertise company for the textile and clothing sector, b)Mr. Touhami Chabir, with a Bachelor of Science in Mathematics and Physics and a Master degree diploma on Logistics and Organization, freelance consultant, trainer, assessor and Quality expert for different sectors of industry, including textile and clothing sector, c) Mr Sami Hadiji, Textile Engineer with experience on the textile and clothing industry and d) Mr Panatiotis Lympereas, B.Sc. in Computer Science and Ph.D. in industrial and business studies, Independent Consultant working as a project manager in a number of Greek and international projects, including projects for the textile and clothing sector. The members of the EQEC have already started working on their tasks and by mid-June they are expected to deliver their 1st year's reports with the results of their assessments, which will be presented to the WINTEX consortium by CRETHIDEV.

MONASTIR UNIVERSITY INNOVATION TEXTILE CENTER IN PROGRESS

by Mr. Fadhel Jaafer (ISMM-Monastir University)

The WINTEX center at ISMM will be created in the near future. The 50 m2 room will be prepared towards the end of June 2021 according to the figure below.

IS2M WINTEX center architecture



The objectives of the center are :

- To strengthen innovation in the textile sector by transferring knowledge and best practices from the EU.
- To offer a set of services dedicated to the Tunisian textile sector.
- To promote cooperation between HEIs and businesses and strengthen the relationship by creating the Academia Textile Industry Council.
- To promote innovation and technology transfer.
- To strengthen the overall collaboration between academia.
- To establish further cooperation between EU and Tunisian HEIs and textile businesses.

The foreseen innovation textiles' center and the council will positively impact the training capacity of ISMMM. Particularly, bachelor and master students will have the opportunity to learn hands-on with state of the art equipment and real case studies of textile companies. Besides, students will have the opportunity to actively participate in the center via traineeships and active involvement in the workshops and dissemination activities. Lecturers and professors will also have the opportunity to fine tune their courses, textile programs and teaching methodologies to incorporate experiential learning by accessing the center.

The purchase of equipment will be focused on a scanning electron microscope (SEM) after agreement of the project leader (UPC). It will analyze the morphology of fibers and textile fabrics in general. It will also allow precise measurement of the pores in the case of nonwovens. The SEM will be acquired and installed in July 2021.

The principle beneficiaries of the ISMMM center are textile industrials that aim to increase their innovative products; such as technical textiles, medical&paramedical textiles, clothings, etc.

FOURTH CONSORTIUM MEETING

By Prof Monica Ardanuy from UPC

Last May 5th, the WINTEX consortium met for the 4th project meeting. During the meeting, the progress of the project was reviewed and the activities to be done for the next six months were discussed.

The first working package is already finished and the main outputs related with the methodology pack, Tunisian national Report, EU Best practices and Recommendations can be found in English Version and in French Version.

An important progress has been done also on purchasing the equipment for the three Tunisian Universities. The tenders have been launched and the equipment is expected by October 2021 at latest.

During the next months the main activities will be related with the development of the capacity building program and the organization of roundtables. The capacity building program will held in Terrassa hosted by the UPC between 6th and 17th September 2021 and in Athens hosted by UNIWA on the 25th-29th October 2021.

The project is running as planed and the next follow-up meeting between partners of the WINTEX project will be scheduled in October, in Greece.

ISET KH INNOVATION CENTER IN PROGRESS

By Dr. Imed Ben Marzouk and Dr. Lassaad Ghali (ISET KH)

ISET KH is at the center of the Tunisian textile sector. It is recognized by close collaboration with industry manufacturers. As a partner of the WINTEX project, it will hold an innovation center aiming at offering great potential for innovation in line with the needs of the sector.

The diagnosis of the textile sector in terms of innovation and the high research and development potential of ISET in the field of technical and innovative textiles, supported by the presence of a research laboratory in textile engineering, push ISET KH to strategically orient towards the prototyping and development of technical textiles (non-woven, composite, etc.).

Given this context, the ISET KH innovation center will be equipped with:Electrospinning unit, Melt blown pilot line, Laboratory calendaring machine, Manual hot press, Laboratory warping machine.

Our textile innovation center will work particularly on:

-technology transfer in close collaboration with industrial companies

-building knowledge of the most contemporary new technologies in nonwoven fabrics and composite materials

-prototyping technical textiles, especially Meditech, Protech, Indutech, Mobiltech, Buildtech, Sporttech, etc.

-Design and develop new projects in relation to the circular and sustainable economy.

WINTEX MONITORING MEETING

By Dr. Amine Hadj Taib from USF

A Monitoring meeting was organized by the National Erasmus office 17 May 2021 on line. During the meeting, the partners discussed with the National Erasmus Office coordinator about the progress of the project and what has been done during the first 18 months of its implementation.The main objectives of this meeting were:

-Monitoring the progress of project activities (by work package),

- Identify potential problems and discuss solutions,

- Evaluate the project deliverables,

- Ensure the quality of partnership and the financial management,

The Project presentation, the Partnership agreement and partners presentation, the beneficiaries, the Work-packages, the results/deliverables' indicators, the dissemination plan, the quality plan, the problems encountered, the solutions proposed, the budget, future actions..., were presented by Monica Ardanuy, the Coordinator of the Wintex project, from UPC, Spain and Amine HAJ TAIEB, the National coordinator of the Wintex project from USF/ISAMS Tunisia. The Progress realization for each Tunisian partner involved in the project, was presented by each partner. Afterwards, some recommendations were presented by National Erasmus Office coordinator for the different upcoming activities. This meeting was a useful opportunity to suggest possible improvements for the project sustainability.

STRATEGIC AWARENESS

TEXTILE INDUSTRY IN THE ERA OF INDUSTRY 4.0

The textile manufacturers can improve their incomes, enhance their competitiveness and respond more rapidly to changes through the advantages offered by the Industry 4.0. To exploit efficiently this tool, an arrangement of smart network systems should exist between employees, machines, and production processes.

First, the I 4.0 allows the use of data in real time. A continuous flow of information with the different machines and so a continuous control will be available. The immediate results are lower costs and higher item quality, which thusly expands consumer loyalty. Through these upgraded measures and the decrease in material waste, digitalization opens doors to manage better the production from raw materials to completed articles. It is an important step to sustainability which is progressively appreciated by clients.

Secondly, the I 4.0 ensure transparency in the production process. Managers can track throughout the entire production process the time of each operation, its quality & efficiency. They can get to information progressively and on-request from any place on the planet.

Industry 4.0 makes, also, the maintenance easier. If a problem occurs, every minute of downtime costs expensive because time is money in industry. Quick access via remote maintenance saves time and money. Many things can be resolved without the need of technician travels.

Source: **www.tunisiatextile.com.tn**

Industry 4.0 Textile Manufacturing Factory

CAPACITY BUILDING PROGRAM (TRAINING TOOLKIT AND E-BOOK)

By Yiannis Chronis from UNIWA

The training toolkit is a set of electronic documents and presentations, compiling the training material for the training of the textile innovation centers, as well as students in internships and very other interested scholar or stakeholder. The material will be accessible from the project website to registered users.

Additionally, this material will be compiled as an E-book for further training to innovation textiles center and students.

The training needs resulted from the needs analysis in the Tunisian National report is grouped in 9 training units. The training toolkit was developed by a joint effort from all of the project partners and will be available in English and French languages.

U1 Textile Technology
U2 Environmental issues in the Textile and Clothing Industry
U3 Quality aspects and Laboratory practices
U4 Design fashion for upscaling and differentiation
U5 Technical and functional textiles
U6 Current Management and Marketing of Textile and Clothing Industries in a Global Environment
U7 Sustainability and circular economy
U8 Trends in Education, Training and Networking
U9 Cooperation and best practices
U10 Brainstorming

The training toolkit and the E-book , will be available by end of June 2021.

GHETLAB : TOWARDS A NEW ERA FOR TEXTILE IN TUNISIA

Yassine Zarroug (GHETLAB Startup)

1. Presentation of the company and the founder:

Can you tell us about your background and your company?

My name is Yassine ZARROUG, textile Engineer graduated from the National School of Engineering of Monastir (ENIM) in 2002. I had more than 18 years of professional experience in the field of Technical Textile within European multinationals (Faurecia, Lee Cooper, MA, Lytess France, WAT Tunisia...). I am the founder of the GHET LAB startup in 2016 which is a Development laboratory specializing in Functional Textile for Sport, Wellness and Medical application.

GHET LAB has specialized in the production of intelligent and functional textile products according to the needs of its customers, by integrating microelectronics, textile tensors, technical fibers and cosmetics. In 2016, GHET LAB signed the International Cosmetics Convention with the International Network of Cosmetic Clusters (WICCS) as a founding member. In 2018, GHETLAB contributed to the development of the 1st Technical Textile Cluster in Tunisia as a founding member. In 2019, we launched our GHET FAB production workshop specializing in Sport and Para-Medical products.

How to differentiate your business from the competition?

Specialized Know-how in the Smart & functional garment with a good professionnal experience.

2. The origin of the idea and the company creation process:

Why do you decide to do your own business?

Thanks to my background, I have a good technological vision, which made me think of working on an innovative product for a future market.

How did you come up with the idea?

It was once during a discussion with a medical center manager who explained me the problem of monitoring, in Real time, the health status of some people such as athletes and aging people... Since then I have been thinking about a smart solution: smart clothes.

Your vision of entrepreneurship:

1) Work with passion. 2) Give meaning to what I do. 3) Gain more experience. 4) Know myself better and increase myself-confidence. 5) Create a business to gain quality of life.

How long did it take to put the project together?

2 years

UPCOMING EVENTS

WINTEX - FIRST ROUND TABLE

By Dr. Yosra Braham from MFCPOLE

Innovation and tech transfer in Tunisia:

The main objective of the round tables is to attract local stakeholders to get involved in the setting up of the textile innovation centers that WINTEX project aims to create in three Tunisian HEIs. In fact, this is the key in making the centers sustainable and attractive for the Tunisian ecosystem.

In this context, mfcpole is responsible for the organization of the first round table on “Entrepreneurial and innovation transfer opportunities with the innovation textiles’ centers”.

This event will be organized in hybrid format on September 2021. The objective is to mainstream project scope and activities in partner countries in order to facilitate:

-The awareness raising on the importance of advanced textiles’ centers and collaboration between companies and HEIs for economic development.

-The participation of beneficiaries and end-users in the different phases of the project.

-The promotion & dissemination of projects intermediary and final results and outcomes.

-The take up of project results.

-Self-sustainability and exploitation after project ending.

Background papers which will be the starting point for a debate about the importance of innovation in textiles’ centers and the relevance of innovation fostering and transferring in Tunisia are already prepared.

A pool of SMEs/Startups, research structures, stakeholders, representatives from the Tunisian Ministry of Industry and from support organizations such as CETTEX… will be invited to participate to this round table in order to enrich the debate and hence facility the drafting recommendations , following this event, to encourage innovation textiles’ centers development in the region and promoting entrepreneurship.

3. Progress

What were the biggest challenges and/or difficulties you encountered when starting your business?
Working capital and Prototypes development
What have been your greatest successes?
- Build a team that shares the same passions
- Make a product that appeal to doctors in Tunisia and Europe
Did you benefit from the services offered by the support organizations (such as the Monastir Technopark)?
Absolutely; with a good support, participation in events very beneficial to startups, some indirect aid, facilitate access to the various national and international players.
Evolve with your company: facing new challenges:
There is an evolution since the creation of the GhetLab company:
- launch of a new innovative and commercialized product
- launch of our production workshop
- evolution of the GHETLAB workforce and a turnover

4. Future development of your company

How do you see the future of GhetLab?
GHETLAB will achieve an important evolution in the near years by the realization of our projects on national and international scale.
How do you manage your team despite your young age?
Through collaborative management and horizontal leadership

5. Recommendations

As a young founder, what advice could you give to the students/researchers that want to create their own business?
Work on 3 important axis:
-Realized your POC before starting your business
-Look after an economic and management support
-Look for an industrial partner to support you in the beginning

If you go back a few years, would you choose the same direction?
Sure but with some special change to save time and money.

Real-time, continuous and remote monitoring sport's T-shirt.

UPCOMING EVENTS

WINTEX - SECOND ROUND TABLE

By Mr. Neji Laadhari from ATCTex

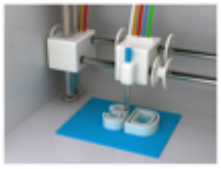
Textile innovation centers: a lever for the Tunisian Textile & Clothing sector development:

This event will take place on November 12, 2021 and will be organized by ATCTex (as consortium member of the WINTEX project).
WINTEX project aims to set cooperation links between academia and industrials in order to contribute to a better matching: training-employment.
This round table will bring together : the thirteen project partners, representatives of support structures (FTTH, CETTEX, Ministry of Higher Education and Scientific Research, Ministry of Industry, Energy and Mines, etc.), universities and HEIs, research structures and textile and para-textile manufacturers.
The objective of this round table is to set the business model and business plan of the textile innovation centers that will be established by the WINTEX project. In this context, this meeting aims at: the identification of opportunities for both parties (academia and industrials), the development of a partnership and collaboration approach based on real commitment and the exchange of information and experiences between the different partners, the determination of the modalities and the operating mechanisms of these centers, their various offered services, their possible legislation and their financing, as well as their sustainability.

COLLABORATION BETWEEN ACADEMIA AND INDUSTRY FOR THE T&C MACHINE FABRICATION

PISWI PROJECT

By Dr. Yosra Braham (MFCPOLE)



The Textile and Clothing (T&C) sector is a pillar of the Tunisian national economy. However, it faces many challenges due, not only to its structure, but also to its competitiveness and reactivity to the new trends. Machines fabrication is part of Monastir-El Fejja Competitiveness Pole (Mfcpole) strategic vision as far as the SMEs competitiveness is concerned. In this context, mfcpole as a principal and active element of the Tunisian T&C ecosystem took the initiative to create partnership relations with the University of Hamburg. This partnership was shaped by the development and the launch of the collaborative project PISWI (Incubation sites: Self-replicating, open production spaces as innovation incubators in Tunisia). This project is funded by the BMBF within the framework of Tunisian-German cooperation and has officially started on June 2021 for a period of three years. The main objective of the PISWI project is to create, through digital manufacturing, and by exploiting open source tools (software and electronic components), prototypes of T&C machines. The manufactured machines will be tested in industrial framework. Hence, mfcpole will be a bridge between, the researchers and students that will ensure the fabrication of the machines, from the first side, and the SMEs/Startups that will ensure the industrial test phase, from another side. The project also offers a whole program of capacity building which will serve, among others, to improve the image of textiles among students and to upgrade the students competencies (future employees for the SMEs) and this, through the establishment of a specific curriculum on digital manufacturing using Open Source resources in collaboration with the National Engineering School of Tunis (ENIT), the National Engineering School of Monastir (ENIM) and the Higher Institute of technological studies of Kasr Hellal (ISET Ksar Hellal).

UPCOMING EVENTS

CIRATM-9

Hybrid edition of the 9th International Conference of Applied Research on Textiles and Materials, CIRATM-9, will be held from 12 to 13 November 2021 in Monastir, Tunisia.

CIRATM-9 is jointly organized by:

-Laboratory of Textile Engineering (LGTex, Tunisia)

-Monastir University (Tunisia)

-Tunisian Association of Textile Researchers (ATCTex, Tunisia)

-The Competitiveness Cluster Monastir - El Fejja (mfcpole, Tunisia)

-Association of the Universities for Textiles (AUTEX)

-Balkan Society of Textile Engineering (BASTE)

-National Research & Development Institute for Textile and Leather (INCDTP, bucharest- Romania)

-Yazd University (Iran)

-Textile Testing Center (CETELOR, Lorrain- France)

-Centre of Textile Science and Technology (2C2T, Portugal)

Laboratory of Physical-Chemistry of Mineral Materials and their Applications (LPCMMA, Tunisia).

For the 9th time, CIRATM will bring worldwide researchers and practitioners to share and discuss the latest scientific concepts and technological developments in textile and materials. It also intends to promote sharing ideas and emerging technologies, as well as to foster research and development collaborations amongst academia, research institutions and relevant industries.

This conference provides an international open forum for researchers from academic and industrial fields to present their original work and exchange ideas and information.

For further information about the conference, download extended abstract and paper template and submit a paper, please visit and register on the website : www.atctex.org/cirat.

https://atctex.org/cirat/

BRIDGING THE WAY BETWEEN ACADEMIA AND INDUSTRY: PARCTICAL INITIATIVES

TECHNORIAT PROJECT

By Mr. Ramzi Zammeli (Tunisia Technoparks Association)

Technoriat project is a support program for technology startups emerging from the results of scientific research and patent-based. It has the overall objective to open the door between laboratories and markets by supporting the commercialisation of research results.

It is coordinated by Our Digital Future (a Tunisian specialised company in startup incubation) and Tunisia Technoparks Association in collaboration with the Tunisian Ministry of Higher Education and Scientific Research and the regional representation of The French Alternative Energies and Atomic Energy Commission (CEA). The project is co-funded under Innovi program supported by the European Commission and managed by Expertise France.

Among others, the project supports textile technologies coming out of laboratories (TRL 4) to insure their incubation, their scale up and their commercialisation (TRL 9). It offers in particular a direct support to manage the intellectual property portfolio (Go / noGo, prior art research, drafting, filing, monitoring, exploitation, etc.) and to insure the transition from prototype to industrialisation (standardisation, certification, validation, small series production, etc.).

For more details : www.technoriat.net

Involvement of the Tunisian Technopolitan ecosystem in the implementation of the project activities

UPCOMING EVENTS

TUN-TEX-3

In addition to CIRATM-9, the Tunisian Association of Textile Researchers "ATCTex" and the Textile Engineering Laboratory "LGTex" are co-organizing in partnership with the Monastir - El Fejja competitiveness cluster "mfcpole" the 3rd edition of "Tunisian Textile Events Tun-tex Events 2021" on November 11, 2021, in Monastir (Tunisia).

Since its first edition, Tun-tex Events has become a reference for several players in the Tunisian textile sector. During the Tun-tex Events 2018, more than 450 participants attended this event, including 320 students and more than 35 manufacturers.

Tunisian Textile Events is a festive day of events which aims to bring together the actors of the textile sector and to promote this promising sector in Tunisia.

During the new edition, Tun-tex Events 2021, several actions will take place: seminars, exhibition spaces, competitions, poster sessions, fashion shows, meetings, R to R and R to B as well as a presentation of the latest research and innovation results in Tunisia.

The entire community working in the Tunisian textile and clothing sector will be welcome at Tun-tex 2021, in particular polymer and fiber manufacturers, fiber and fabric traders, clothing manufacturers, fashion designers, machine manufacturers, marketing players, students and academics. For further information about Tun-tex 2021, please visit and register on the website: www.atctex.org/Tun-Tex.

https://atctex.org/Tun-Tex/

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Wintex Project @ProjectWintex Wintex project

http://wintexproject.eu/