



itida
IT INDUSTRY DEVELOPMENT AGENCY

itac
program

Information Technology Academia Collaboration (ITAC)

Amr Safwat, PhD
ITAC Manager

2024





قانون رقم ١٥ لسنة ٢٠٠٤

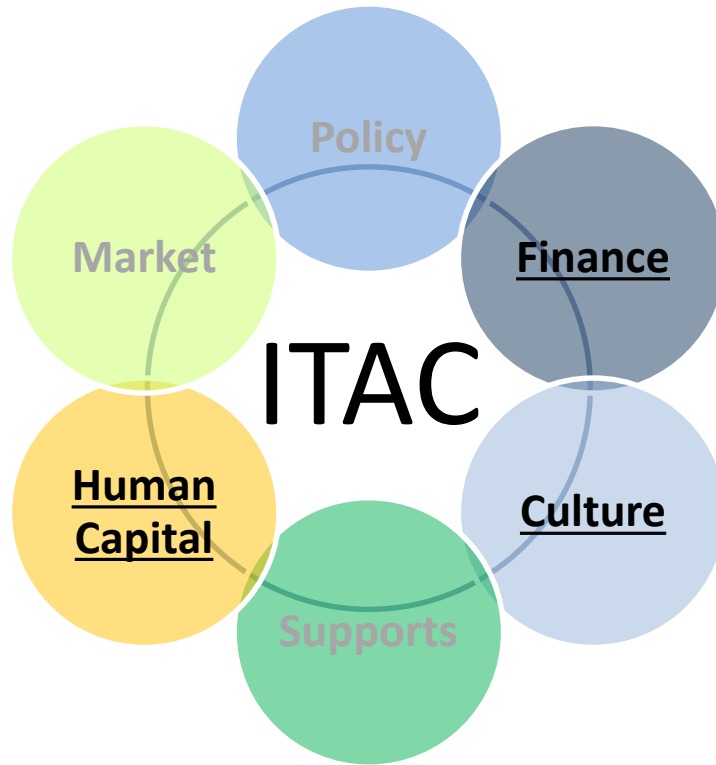
بمنظّم التوقيع الإلكتروني

وبإنشاء هيئة تنمية صناعة تكنولوجيا المعلومات

مادة ٢ - تنشأ هيئة عامة تسمى " هيئة تنمية صناعة تكنولوجيا المعلومات " تكون لها الشخصية الاعتبارية العامة وتتبع الوزير المختص ، ويكون مقرها الرئيسي محافظة الجيزة ، ولها إنشاء فروع في جميع أنحاء جمهورية مصر العربية .

مادة ٣ - تهدف الهيئة إلى تحقيق الأغراض الآتية :

- (أ) تشجيع وتنمية صناعة تكنولوجيا المعلومات والاتصالات .
- (ب) نقل التكنولوجيا المتقدمة للمعلومات وتحقيق الاستفادة منها .
- (ج) زيادة فرص تصدير خدمات الاتصالات وتكنولوجيا المعلومات ومنتجاتها .
- (د) الإسهام في تطوير وتنمية الجهات العاملة في مجال تكنولوجيا المعلومات والاتصالات .
- (هـ) توجيه وتشجيع وتنمية الاستثمار في مجال صناعة تكنولوجيا المعلومات والاتصالات .
- (و) رعاية المصالح المشتركة لأُسطة تكنولوجيا المعلومات .
- (ز) دعم البحوث والدراسات في مجال تكنولوجيا المعلومات والاتصالات وتشجيع الاستفادة بنتائجها .



Students Support

- **GPs:** Graduation projects support (30 KEGP/Project)
- **DEBI:** Digital Egypt Builders Initiative

Collaborative Funded Projects

- **CFPs** (National calls): Collaborative fund projects (3 MEGP)
- **ESITIPs:** Egypt-Spain IT innovation projects (3 MEGP)
- **Patents filing** (10 K US\$)
- **EMEs:** Egypt Makes Electronics (5 MEGP)

Newsletters and Workshops

- Tech Days
- Write IT
- ICT R&D news

ITAC National Calls

Jan. – Feb.

Call for graduation projects

Mar. – Apr.

Call for CFPs

Sep. – Oct.

Call for CFPs

ITAC International Calls

Nov.– Mar.

CFP with Spain

Collaborative Funded Projects (CFPs) (2006-

- 244 Projects
- 182.6 MEGP
- 27 Universities
- 108 Comp.

Graduation Project Support (GPS) (2006 -

- 1482 Projects
- 7.68 MEGP
- 41 Universities

Digital Egypt Builders Initiative (DEBI) (2021 -

- 648 Students
- 6.59 M\$
- 4 Universities

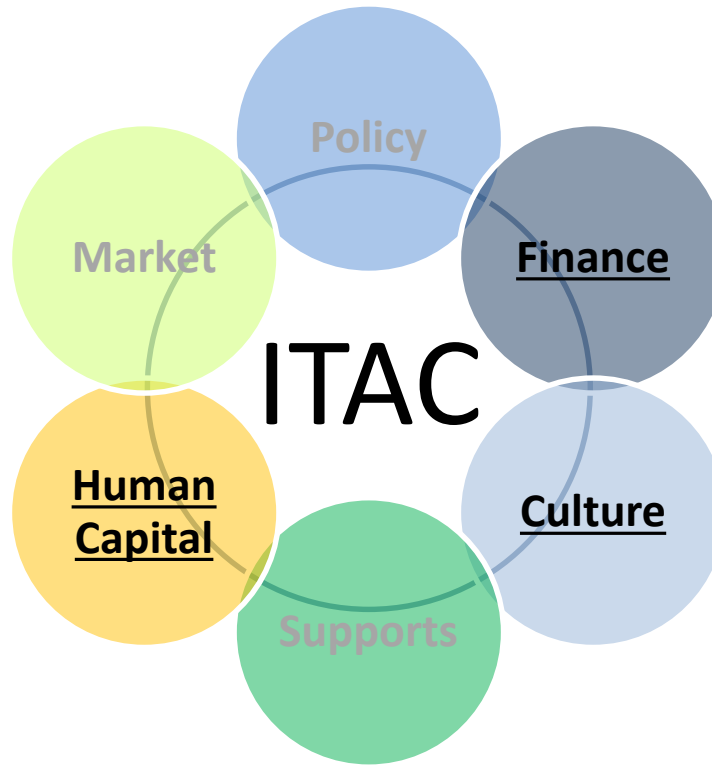


“ Not only has ITAC stimulated collaboration between academia and industry but has *in many cases led to the development of very successful products on the international level.* ”

“ *The ITAC program is one of the most flexible and efficient programs supporting innovation,* however its scope is limited to ICT industry and the amount of funding is also limited compared to the STDF for example. ”

*United Nations Economic and Social Commission for Western Asia (ESCWA),
National Technology Development and Transfer System in Egypt, 2017*

The European Commission selected the ESITIP program to be presented in the best practices session in *EXPO-Dubai 2020.*



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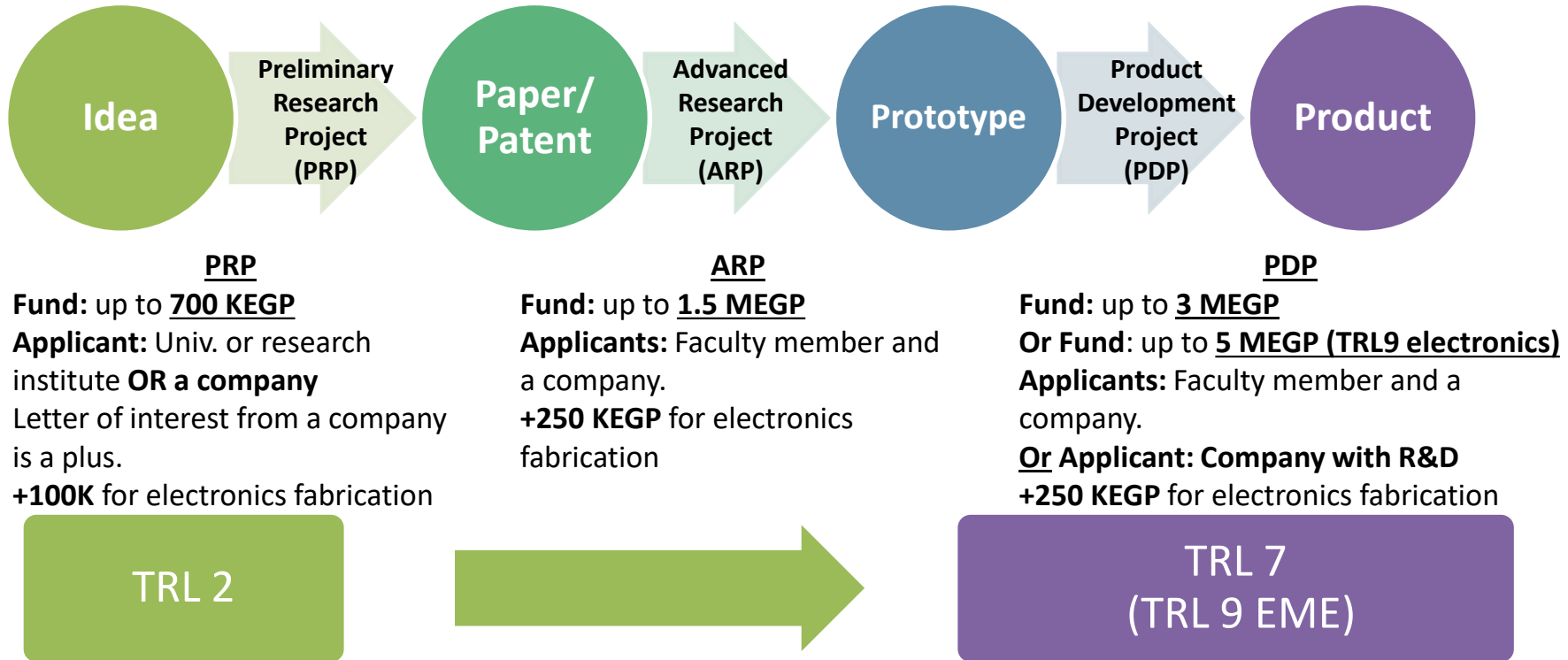
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Newsletters and Workshops

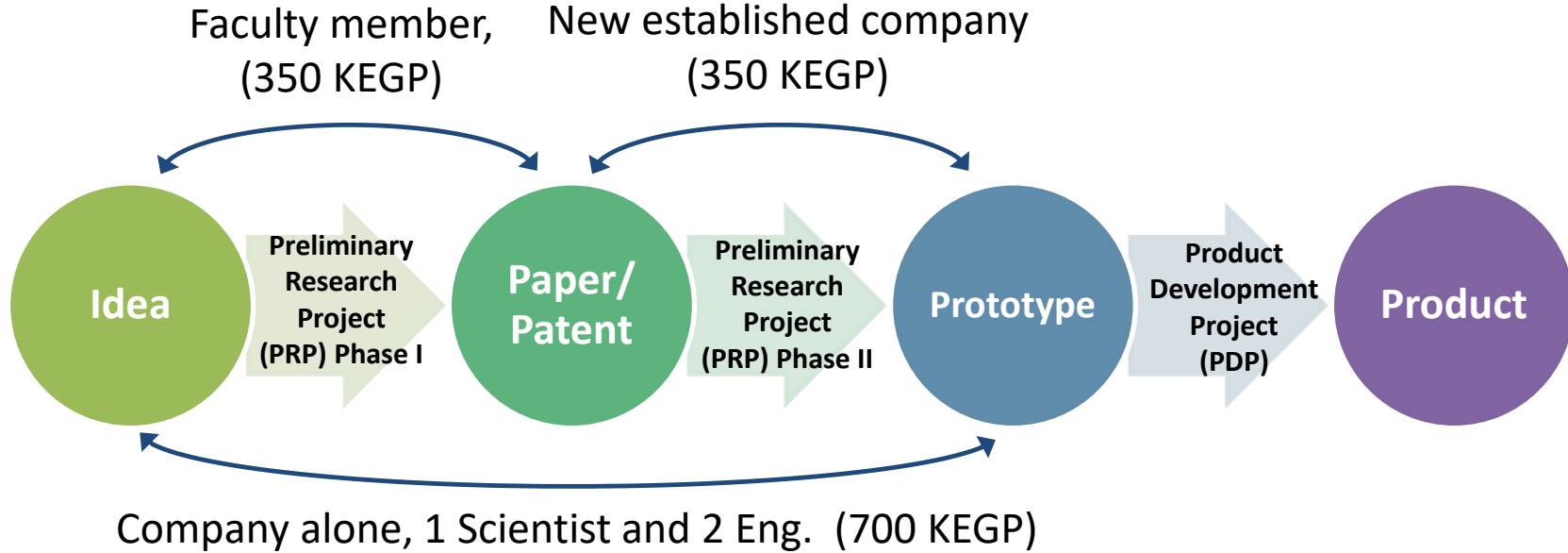
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CFP: Funding Schemes



NASA TRL Scale

CFP: The new PRP



PRP

Fund: up to 700 KEGP

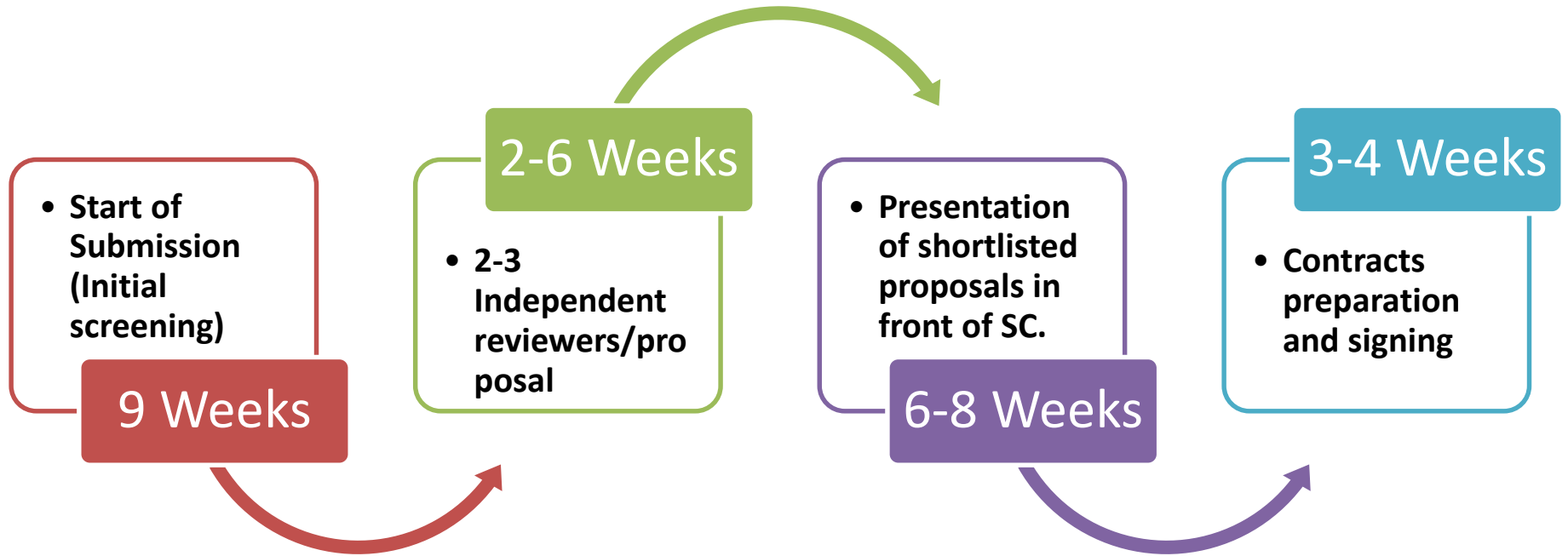
Applicant: Univ. or research institute **OR** a company

Letter of interest from a company is a plus.

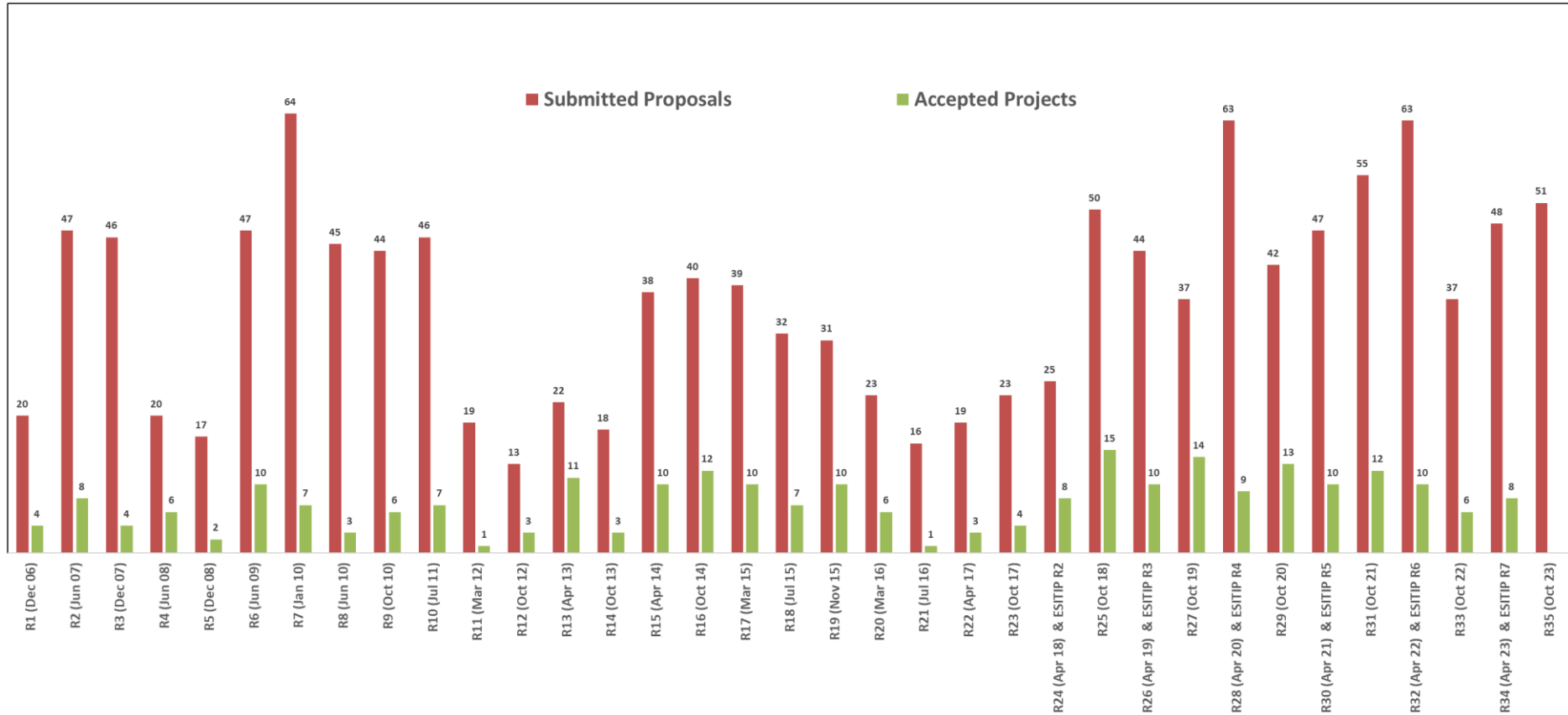
+100K for electronics fabrication

Why University?

- **ARP:** The fund is up to 1.5 MEGP.
- **Purchase of equipment** is allowed as long as they will be acquired by a governmental university.



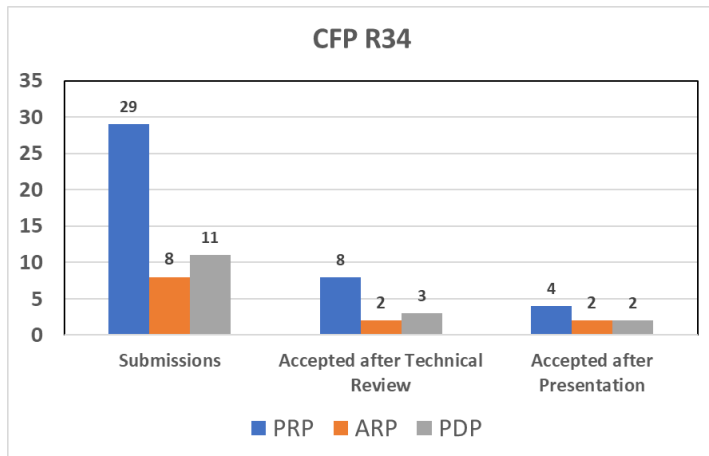
CFPs: Submission Statistics



7 Universities and Research Inst.

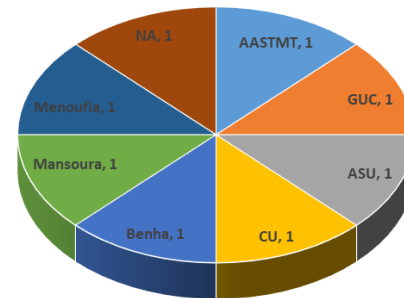
19 Universities
and Research
Institutes

21 Companies



48 reviewers,
70 review reports

43 pres.
evaluations



4 Companies
Robota Industries company ;
EA for Software Solutions;
BioBusiness; MEMS Vision LLC

13.6 MEGP

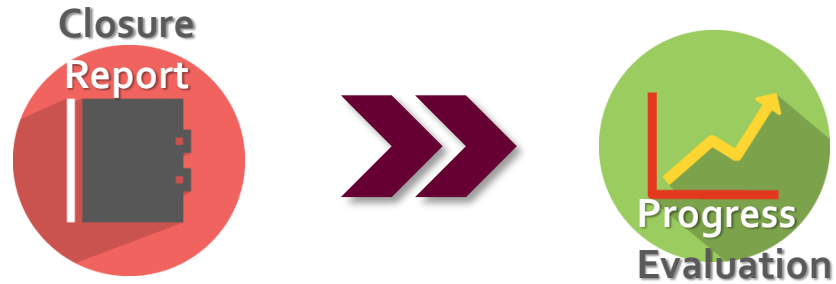
CFP: Mar. 23- Apr. 23

Review Process

Results

CFPs: Execution Phase





Success
Indicators



Commercial



Technology

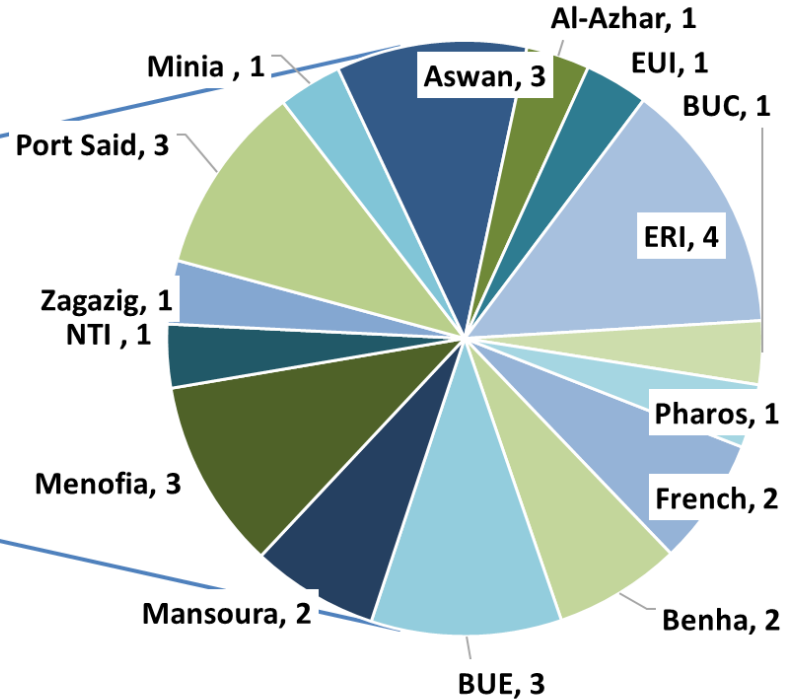
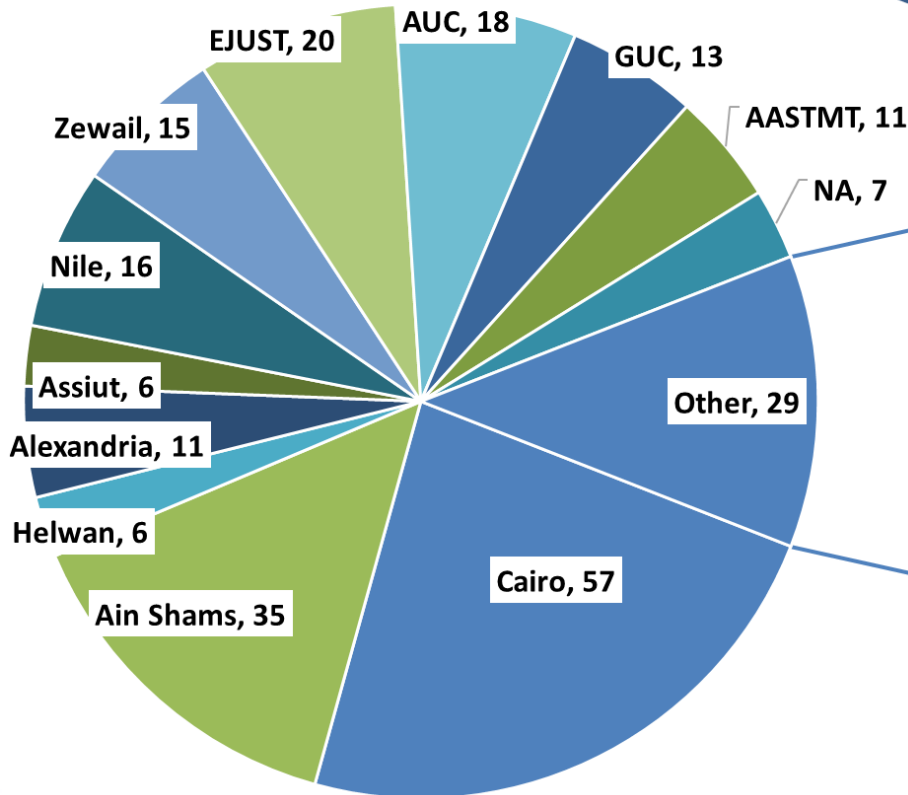


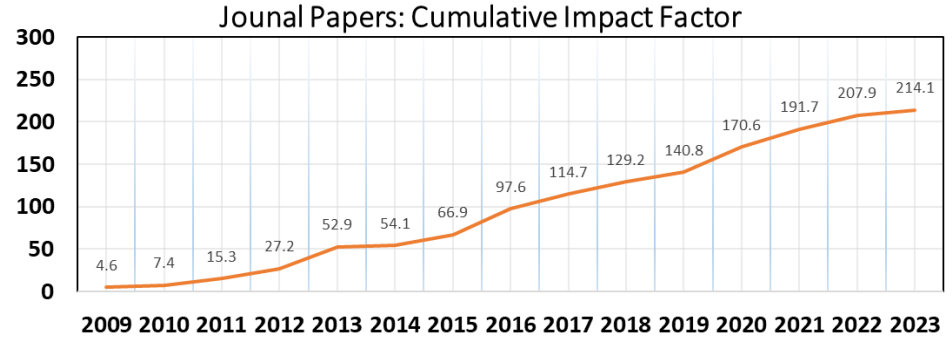
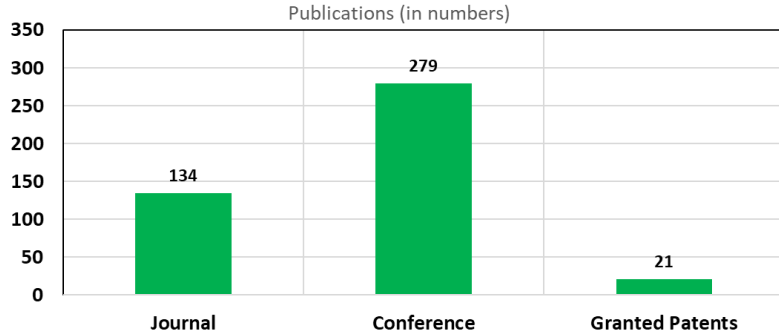
Job Creation



CFPs: Beneficiaries – Academia

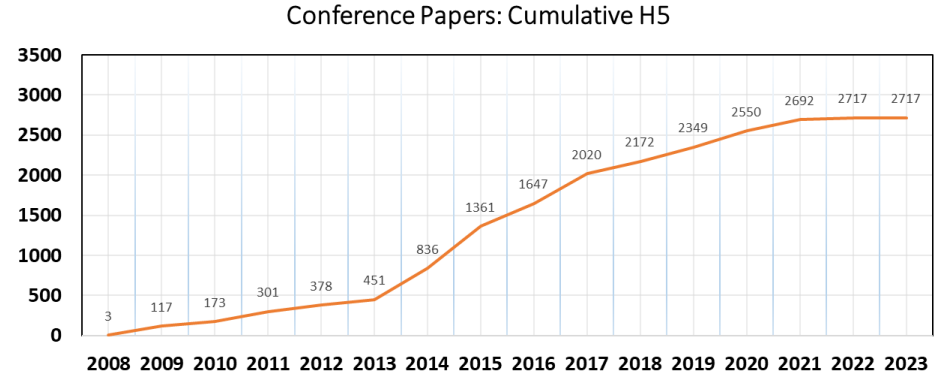
27 Universities/Reseach Ins





Cumulative number

	2018	2019	2020	2021	2022
Journal papers	61	71	77	97	123
Conference papers	144	174	187	217	263
Patents	16	19	20	21	21



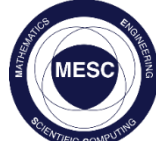
CFPs: Beneficiaries – Industry

108 companies

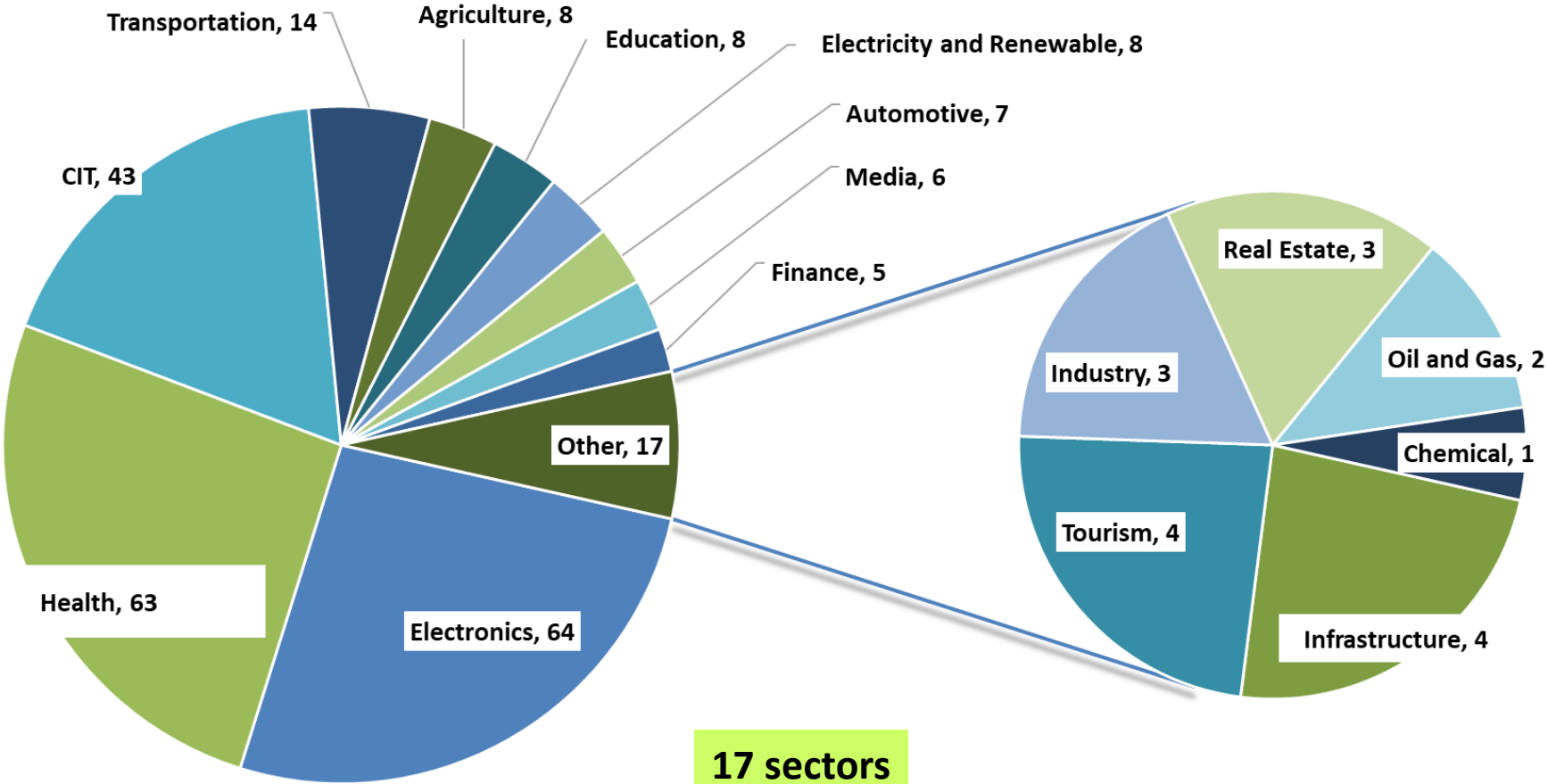
92

- Si-Ware Systems (SWS) 4
- RDI 3
- Vodafone 2
- Smartec Group 4
- Diagnosoft 2
- Silicon Vision 2
- MEMS Vision 2
- BCH 2
- EOIP 2
- Avidbeam 2
- Dilenny 2
- ITQAN 2
- Advintic 2
- Pulse for Integrated Solutions 2
- Master Micro 2
- Biobusiness 2
- Other 2

CFPs: Beneficiaries – Industry



CFPs: Beneficiaries –Economic Sectors



17 sectors

Impact: Industry (ROI)



Optical spectrometer

Partial IP Acquisition by



- Virtual Tutor
- A Product for Arabic Optical Character Recognition



Web-Based Management System for Power Meter Measurements



Full Acquisition by



Intelligent Video IP Surveillance Integrated Analytics



- MEMS Based Timing Chips for IT/Mobile Applications.
- Fully Integrated Weather Station Chips for Smart Phones & Tablets



Mobile Based Jaundice Meter



Tool for Extensive Management and Performance Optimization (TEMPO) for 3G



EME: Smart Water Meter



Advanced Platform for Processing Medical Images of the Heart



The Analog Designer's Toolbox (ADT)



Six-figure US dollar pre-seed funding



- Ultra Low Power Bluetooth Transceiver Chip
- A Fully Integrated Silicon IP for Wireless Zigbee Applications



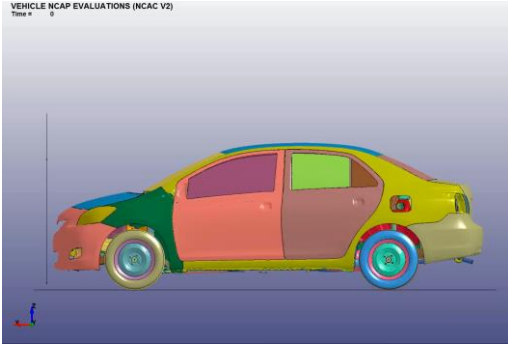
4D Ultra Sound System



RFID-Based Hospital Positioning System

Partial IP Acquisition by **SYNOPSYS**

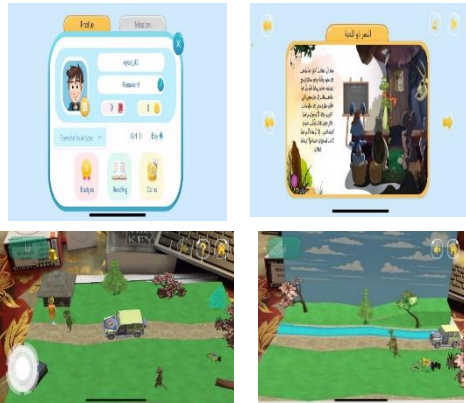
CFP: Recent Projects



Blink- App



Autonomous Car



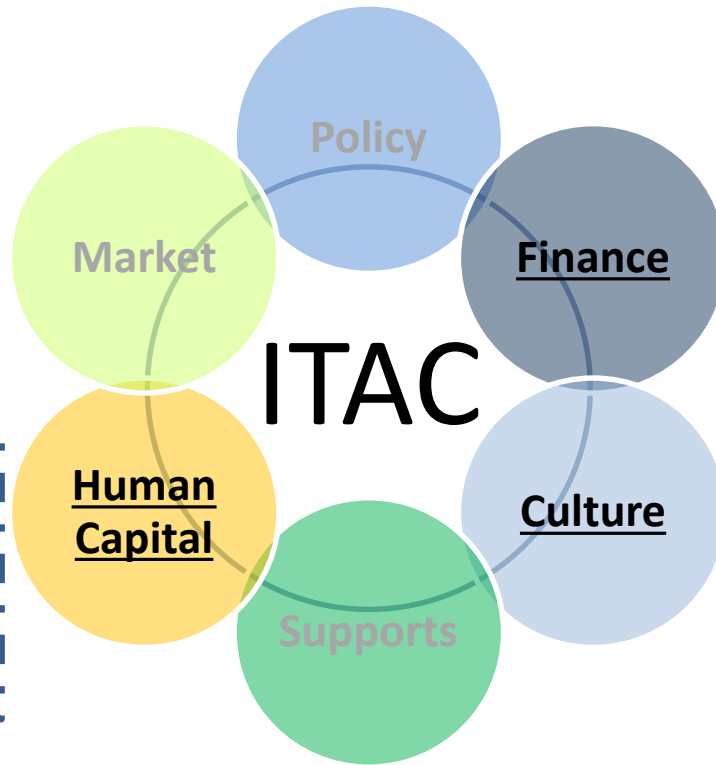
Augmented Reality for Kids



Orange Grading



Maintenance and Operations Solar Plant



Students Support

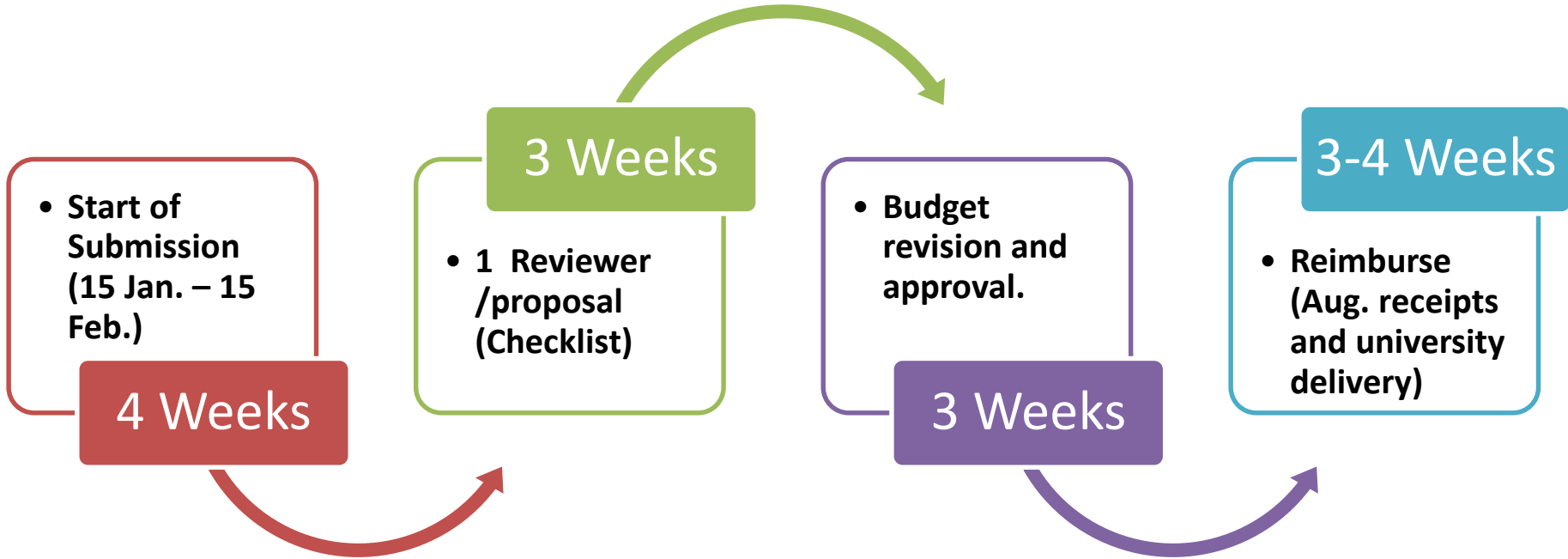
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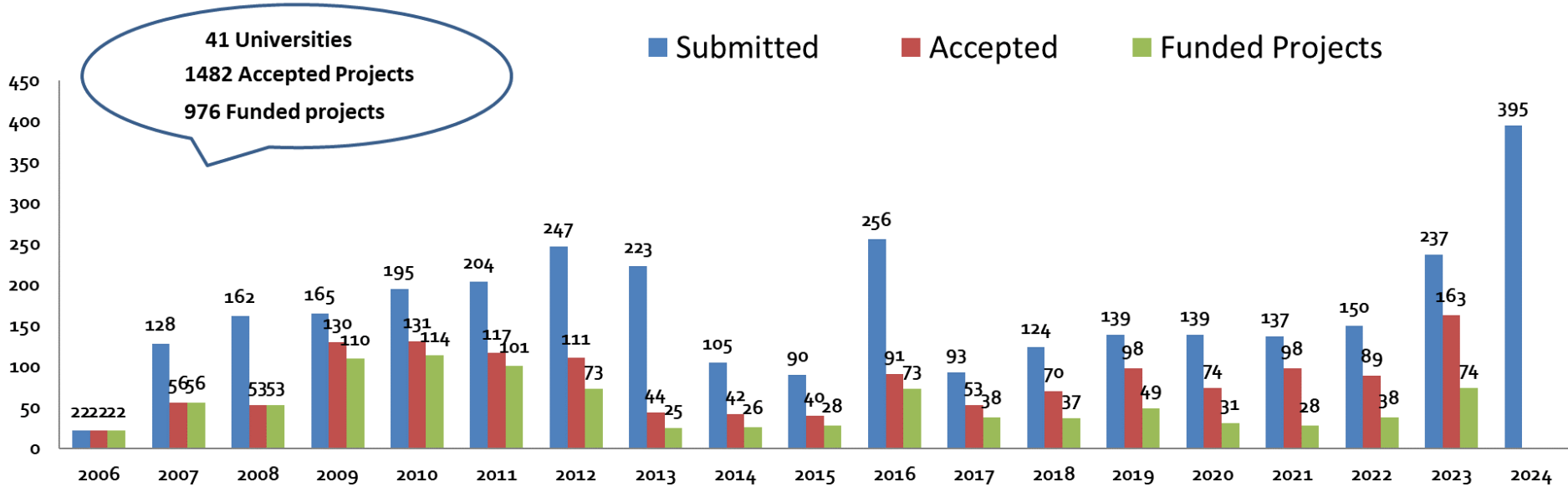
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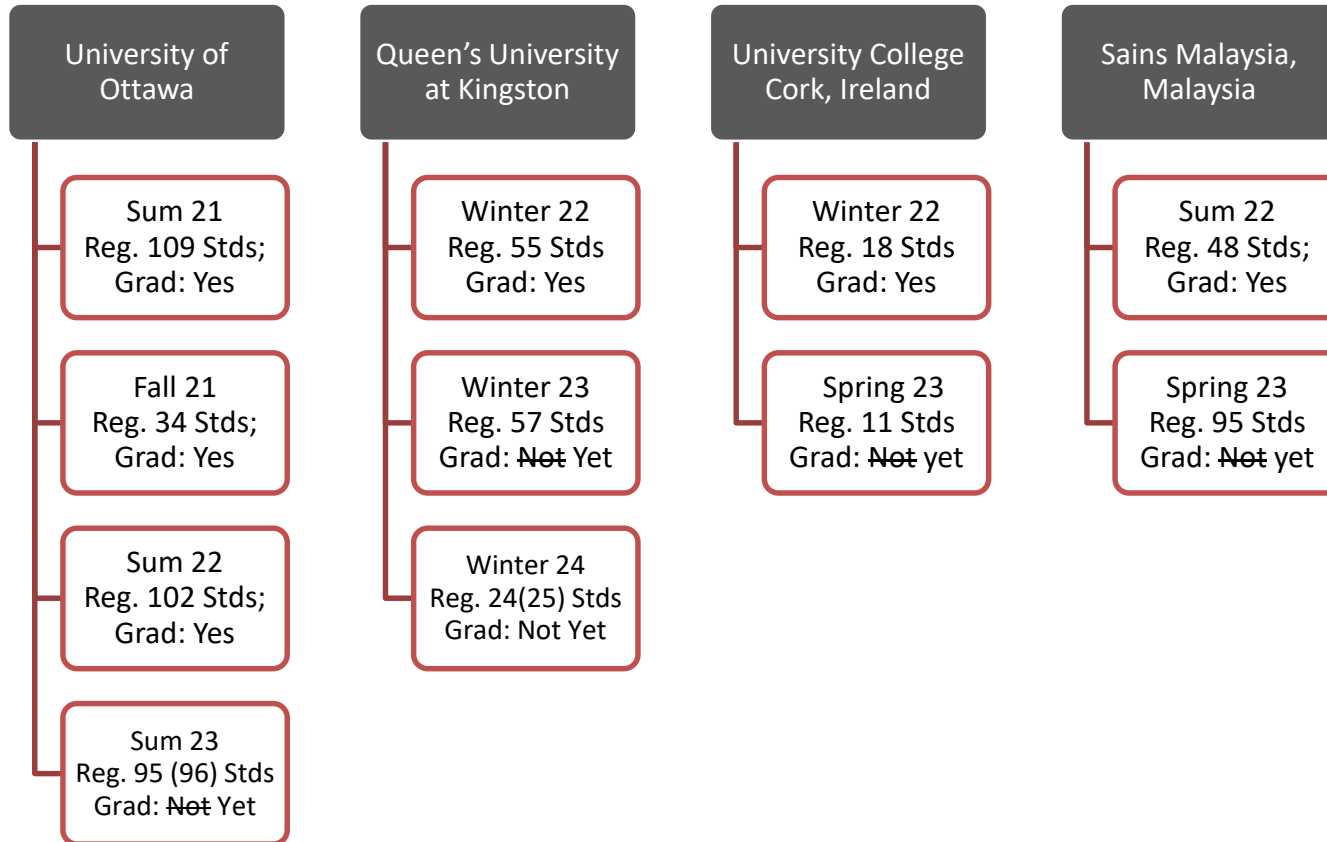
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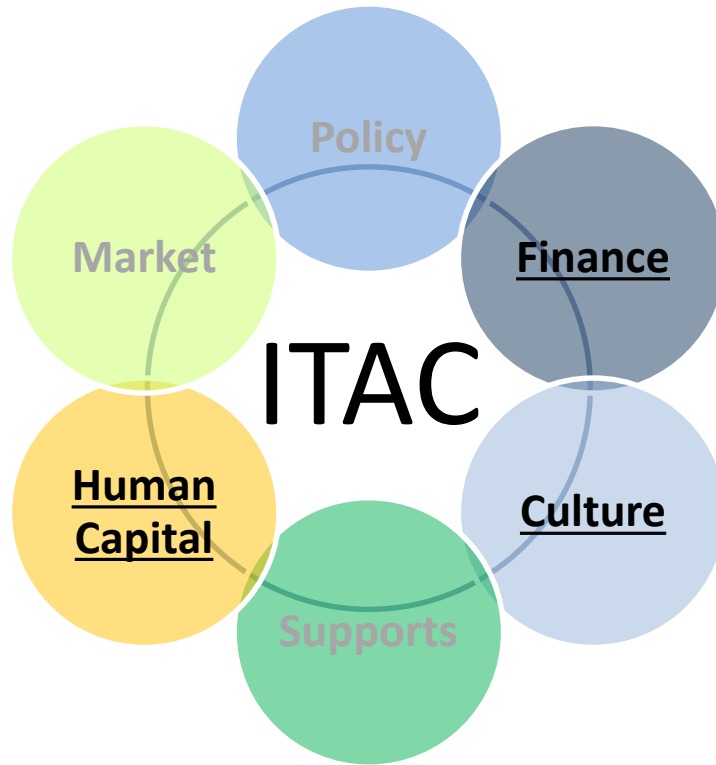
Graduation Projects



Digital Egypt Builders Initiative



ITAC administers the financial agreement with international universities.



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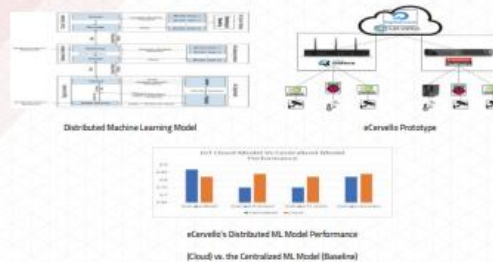
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eCervello: A Prototype for Scalable IoT Systems based on Joint Edge, Fog and Cloud Intelligence American University in Cairo and IoTBlue

Teams from the American University in Cairo and IoT Blue have collaborated to design and demonstrate a prototype for a novel multi-tier machine-learning model for IoT that spans the edge, fog, and cloud. The developed technology is a key enabler for scalable IoT systems in diverse verticals in Egypt and worldwide, e.g., smart cities, ITS, Industry 4.0, and healthcare. State-of-the-art computing architectures are predominantly single-tier where intensive data processing tasks take place only in the cloud. The eCervello technology hinges on i) a multi-tier system with a joint edge, fog and cloud machine learning (ML) model, ii) Distributed ML model hosting light-weight Logistic Regression at the edge working in concert with more sophisticated Neural Network models at the fog and cloud tiers and iii) a data alignment mechanism to handle asymmetric data from multiple sensors (cameras) for a multi-vehicle tracking use case. *eCervello, supporting edge intelligence, addresses key problems in state-of-the-art cloud-based IoT ML systems, namely limited scalability, large round-trip delays from pushing raw data to the cloud to feeding the decisions back to edge devices, imminent network congestion attributed to IoT big 'raw' data, lack of data privacy and costly cloud investments/maintenance, to name a few' Says Prof. Tamer ElBatt, Professor at AUC in Dept. of Computer Science and Engineering and the principal investigator of the project.

As shown, we demo a prototype for a three-tier IoT system using actual hardware and networking technologies. Using the AI City Challenge 2020 public dataset, eCervello demonstrates comparable performance to the centralized ML baseline, yet, with a significant reduction in the training data up to 80% of the whole data set used to train the centralized model



Soft Exoskeleton Glove for hand rehabilitation and assistance with automated assessment features Ain shams University

Researchers from Ain Shams University introduce an instrumented wearable glove, which is actuated using soft robotics. This glove helps patients with impaired hand motion secondary to weakness as seen in patients with stroke. This glove is designed to enable patients to move their hands and regain control through rehabilitation exercises. In other words, this glove can assist both the patient and the therapist to have more effective rehabilitation sessions. The actuators in this glove are modeled and fabricated based on using silicon rubber to develop mechanically programmable fiber-reinforced actuators. Finite element modeling software and sensitivity analysis of the actuator parameters were used during the design and modeling process to develop an actuator capable to achieve the desired movement and performance. "This developed instrumented system provides force and finger range of motion feedback using force, bending, and pressure sensors. This system can perform set of exercises for rehabilitation like finger bending and pinching and monitor the bending angle and force acting on the finger, which are shown on an LCD display to provide feedback for the therapist and patient" stated Dr. Mohamed Awad — associate professor at Ain Shams University and project principal investigator. In addition, smart objective assessment methods have been developed to assess and evaluate patient performance based on Gradient Boosting, Self-Organizing Maps, and XGBoost. A Supervisory machine-learning algorithm using XGBoost was developed to automatically assess the patients based on Fugl-Meyer's assessment of motor recovery. This automated assessment system can help in automated in-home rehabilitation and assessment especially during COVID-19 as this automated assessment system can be utilized to reduce the number of visits to a physician for assessment.



Figure 1: A soft robotic actuated glove



Figure 2: An instrumented passive glove

Mark your calendar for the opening of CFP Round 36! The submission will start on Mar. 3, 2024 and will close by May 5, 2024.

- ❖ The deadline varies depending on the CFP type, the deadlines are as follows:
 - **PRP** submission deadline: **April 21, 2024.**
 - **ARP** submission deadline: **April 28, 2024.**
 - **PDP** submission deadline: **May 5, 2024.**

THANK YOU