

Lifelong learning and apprenticeship at the IUT of Cachan



Context

- A mechanical engineering teacher, have been working at the IUT for 30 years.
- In addition to teaching, I had some responsibilities
 - Head of Department
 - In charge of bac + 3 and then professional license (2000) with the setting up of apprenticeship (since 1996)
 - Member of a National Pedagogical Commission
 - Currently Director of lifelong learning

Context



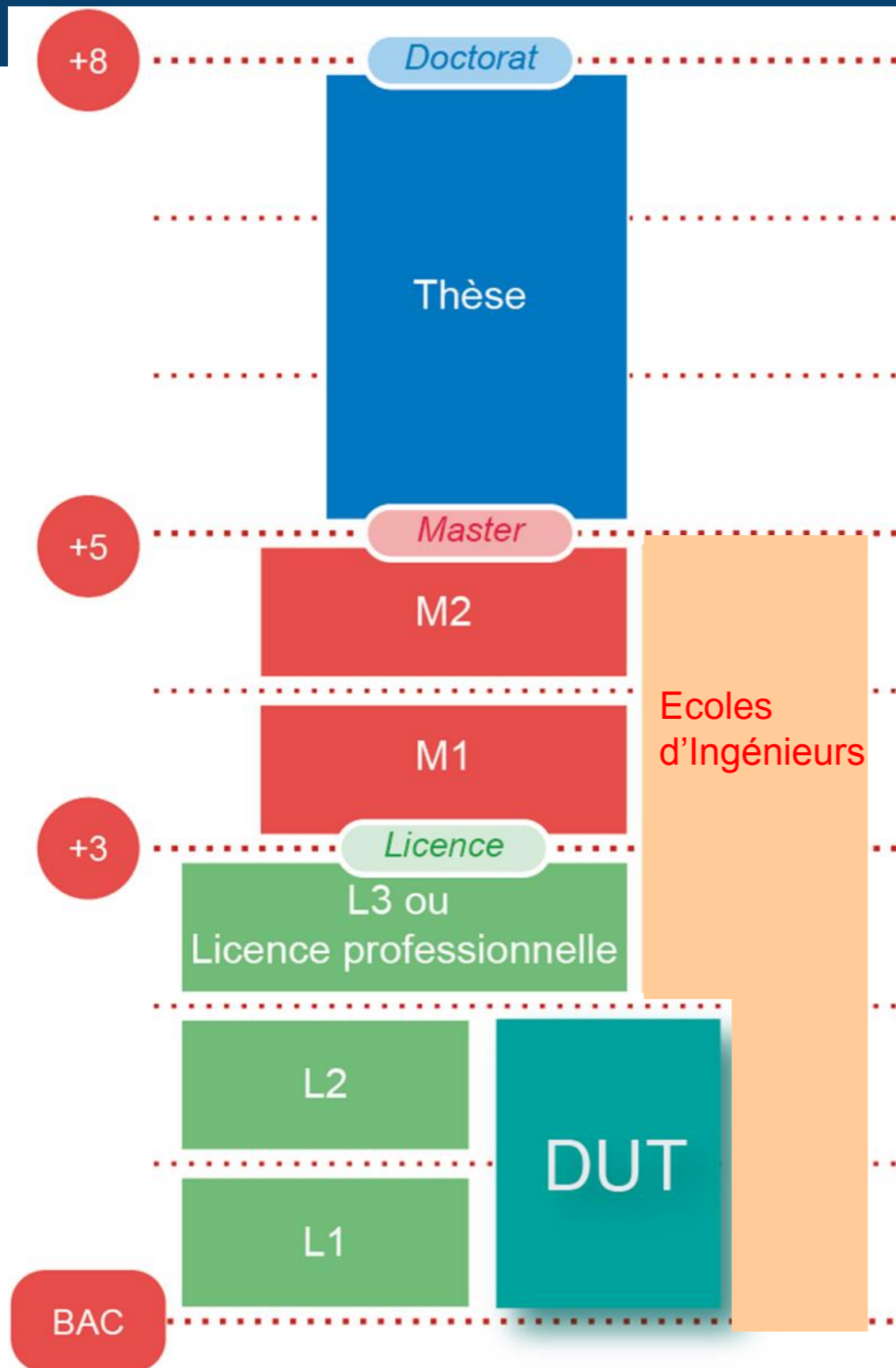
The IUT of Cachan is located in the southern suburbs of Paris (8 km from Notre Dame)

It is attached to the University Paris-Sud

Plan of the presentation

- IUTs and the DUT
 - The IUT which is the institution (Institut Universitaire de Technologie)
 - The DUT which is the diploma awarded after 2 years (Diplôme Universitaire de Technologie)
- Professional Licenses
- Apprenticeship
- Lifelong learning

The DUT and the IUT



- The IUT is attached to a university
- There are 24 DUT specialties, in 113 IUTs
- More than 50 years of existence

The Université Paris-Sud



Paris-Sud University will be replaced by Paris-Saclay University on January 1, 2020

- In ① : Faculty of Medicine
- In ② : IUT of Cachan
 GEii : Electrical Engineering and Industrial Computing
 GMP : Mechanical and Production Engineering
- In ③ : Faculty of Law / Economics / Management and IUT of Sceaux
 TC : Marketing techniques
 GEA : Management of companies and administrations
- In ④ : Faculty of Pharmacy
- In ⑤ : Faculty of Sciences, Faculty of sport science, Engineer School and IUT of Orsay
 MP : Physical Measures
 Chemistry and data processing

IUT of Cachan

3 Departments

- **2 departments of Electrical Engineering and Industrial Computing (GEii)**
 - ✓ **Automatics, Robotics**
 - ✓ **Production and distribution of electrical energy**
 - ✓ **Digital radiocommunications**
 - ✓ **Sound and image processing**
 - ✓ **Embedded computing and electronics**
 - ✓ **Integration of power systems**
 - ✓ **Electrotechnics**

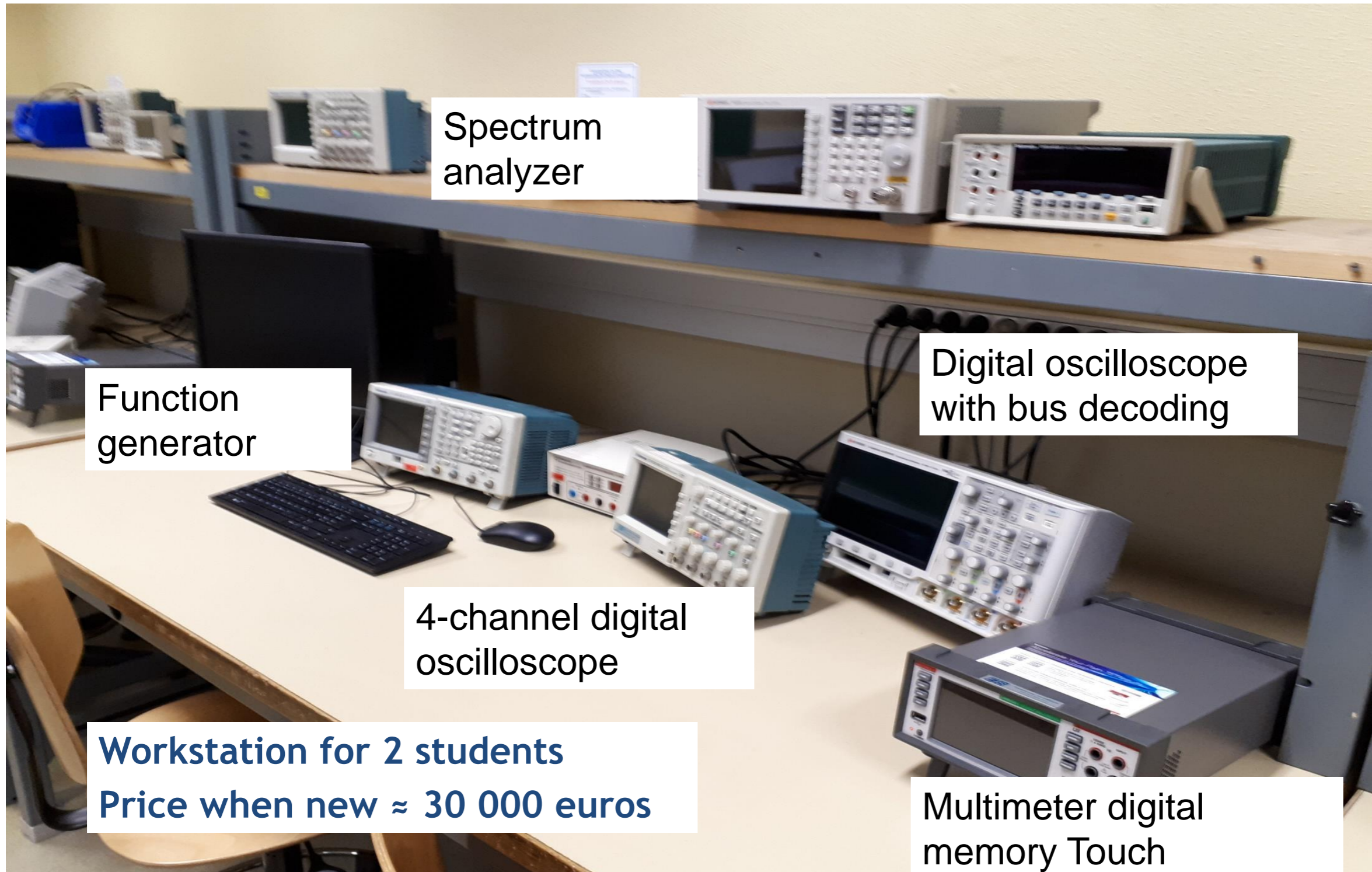
- **1 department of Mechanical and Production Engineering (GMP)**
 - ✓ **Engineering Design**
 - ✓ **Manufacturing methods**
 - ✓ **Metrology**
 - ✓ **Automatics, Robotics**
 - ✓ **Industrial Management, Quality**

More than 1,000
students

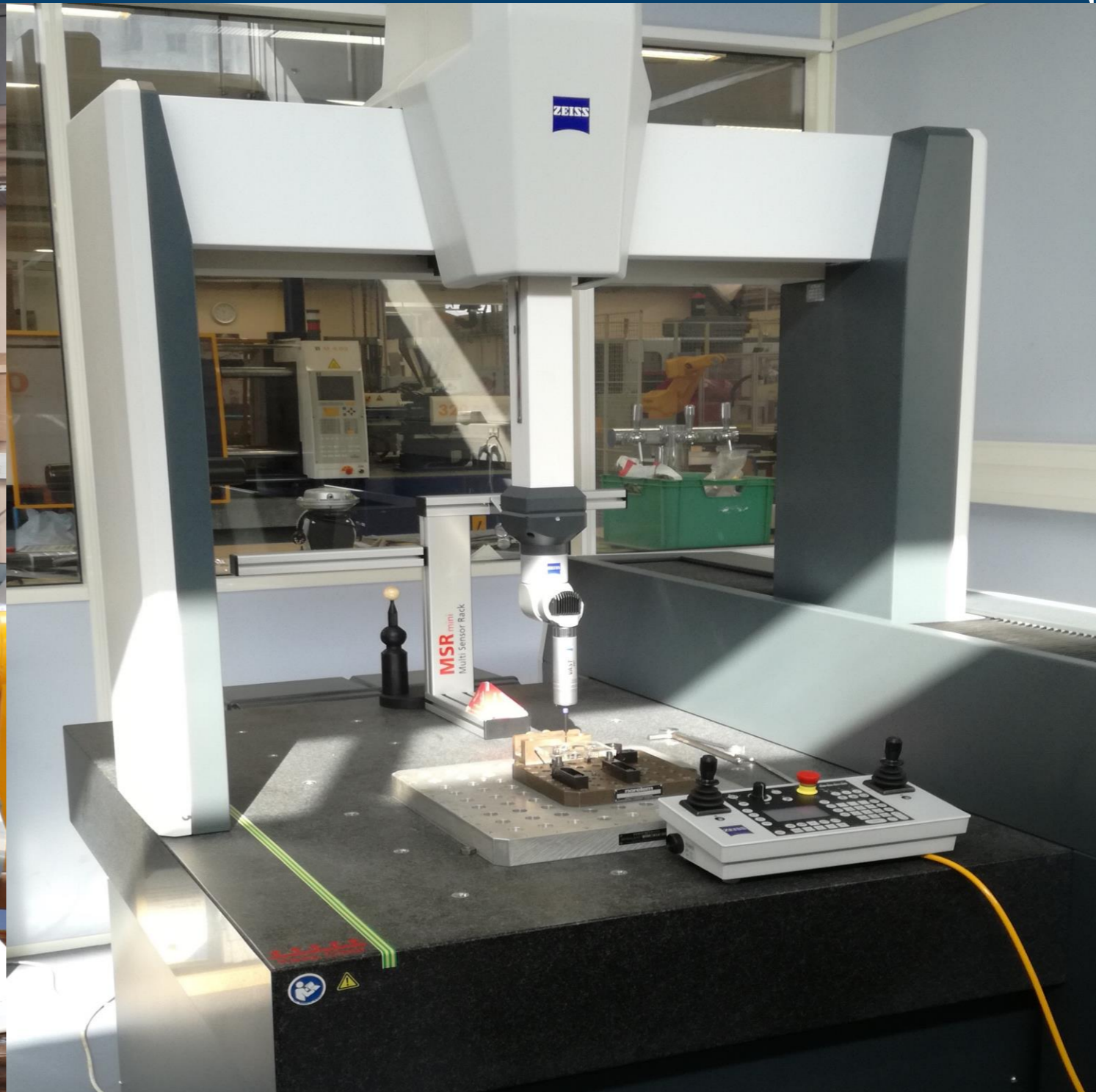
Organization of the DUT

- 1800h (or 1620 h) depending on the course (secondary / tertiary)
- 4 semesters of teaching
- Continuous assessment
- ≈40% of Practical work carried out on technical platforms (our strength, the basis of everything)
- A varied teaching staff
 - Teachers
 - Faculty Members
 - Temporary staff

Platforms



Platforms



Organization of the DUT

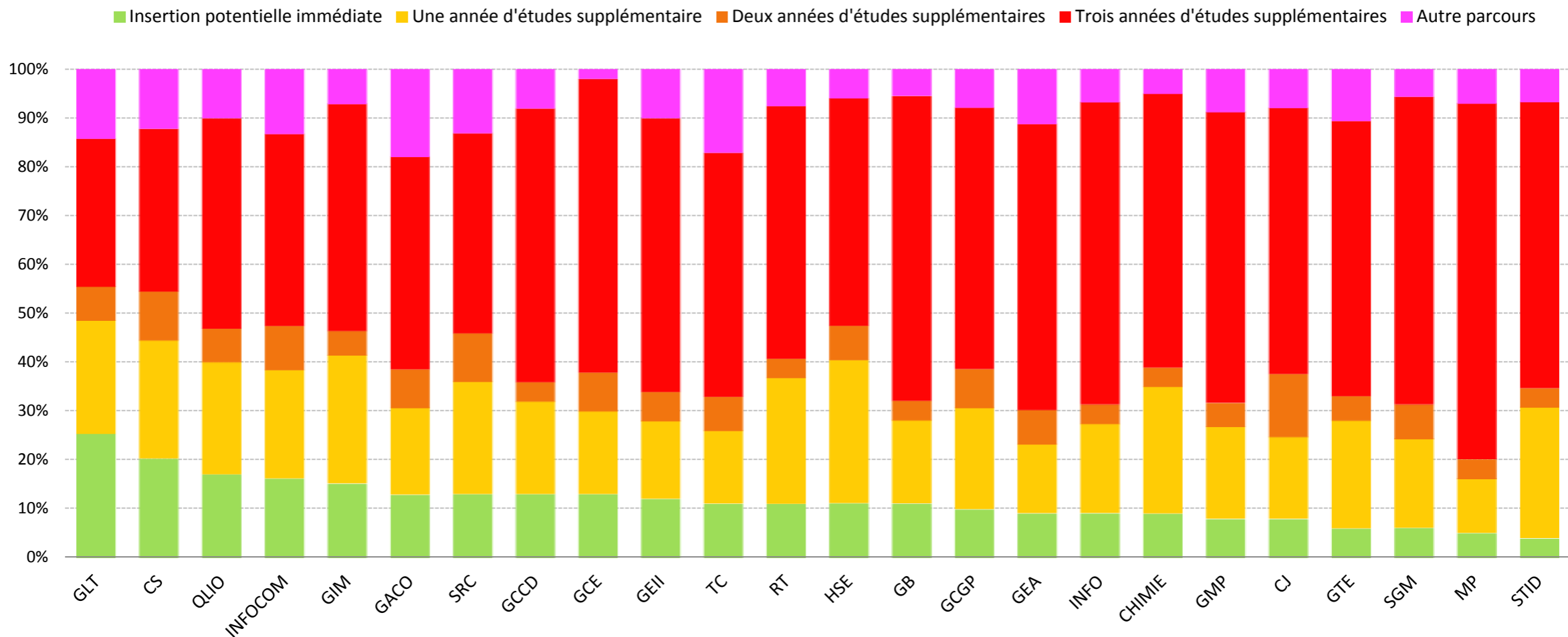
- **Projects**
- **Often a 10 weeks placement (in France or abroad ≈ 20%)**

- Under the responsibility of the R & D Cylinders Manager and in relation with the different services (workshop, mechanics, quality):
- Your missions will be as follows:
- Analyze competition and existing patents
- Design new products dedicated to emergency functions
- Make the part plans under the Solid Works drawing software
- Develop a follow-up schedule for his study and related investment
- Calculate the cost price of the proposed solutions
- Launch prototypes for pre-validation
- Validate solutions through the realization of parts, tests and controls.

- Quality Audit of Sub-Contractor XXX Design Deliverables.
- (Carry out the audits in accordance with the defined schedule / ensure reporting to the Subcontracting Pilot / Measure the level of competence & performance of our subcontractors / Participate in the update of audit sheets according to the new malfunctions detected)

Organization of the DUT

- After the DUT, more further their studies a 90%
 - 1/3 in Professional Licenses (+ 1 year)
 - 2/3 in engineering schools or L3 then Masters (+ 3 years)



National Study on 2014 Graduates (over 25.000 replies)

A network operation

- A National Pedagogical Commission that drives the National Pedagogical Programs + evaluations every 5 years
(9 CPN for 24 specialties)
- Assemblies of Heads of Departments
- Teachers intervene at all levels
 - Helping to write the programme
 - Organising teacher training sessions between IUTs
 - Thematic meeting (Deans of studies, apprenticeship responsable, ...)

Professional Licenses

Currently 173 “mentions” of Professional Licenses in France

Duration 1 year with 500 hours of training + project and internship or apprenticeship

On Cachan, there are **8 open courses**

❖ **5 of the field of Electrical Engineering**

- Industrial Automation and Intelligent Building Industrial IT Networks
- Embedded Systems and Mobile Application Supervision
- Networks and IP transmission
- Biomedical electronics and instrumentation
- Technical Sales

❖ **3 from the field of Mechanical Engineering**

- Design & Industrialization of New Products
- Robotics
- Industrial Management and Logistics

20% of the staff of the IUT
→ 200 alternating

Professional Licenses

Apprenticeship requires:

- A commitment of the teaching team
- An adapted pedagogy
- A providing a follow up of each apprentice in the compagny (visits, oral presentation, online logbook)
- A schedule
- ...
- And a one-year contract with a company

Professional Licenses

2018			
Septembre	Octobre	Novembre	Décembre
1 S	1 L RENTREE	1 J Toussaint	1 S
2 D	2 M	2 V IUT fermé	2 D
3 L	3 Me S1	3 S	3 L
4 M	4 J	4 D	4 M
5 Me	5 V	5 L	5 Me
6 J	6 S	6 M	6 J
7 V	7 D	7 Me	7 V
8 S	8 L	8 J	8 S
9 D	9 M	9 V	9 D
10 L	10 Me	10 S	10 L
11 M	11 J	11 D Armistice	11 M S6
12 Me	12 V	12 L	12 Me
13 J	13 S	13 M	13 J
14 V	14 D	14 Me	14 V
15 S	15 L	15 J	15 S
16 D	16 M S2	16 V	16 D
17 L	17 Me	17 S	17 L
18 M	18 J	18 D	18 M S7
19 Me	19 V	19 M	19 Me
20 J	20 S	20 L S4	20 J
21 V	21 D	21 Me	21 V
22 S	22 L	22 J	22 S
23 D	23 M	23 V	23 D
24 L	24 Me S3	24 S	24 L
25 M	25 J	25 D	25 M Noël
26 Me	26 V	26 L	26 Me
27 J	27 S	27 M S5	27 J
28 V	28 D	28 Me	28 V
29 S	29 L	29 J	29 S
30 D	30 M	30 V	30 D
	31 Me		31 L

	C.I.N.P. 14 Sept. 2018	G.I.L. 14 Sept. 2018	Robotique 14 Sept. 2018
Rentrée	14 Sept. 2018	14 Sept. 2018	14 Sept. 2018
17-sept	I.U.T.	I.U.T.	I.U.T.
24-sept	I.U.T.	I.U.T.	I.U.T.
01-oct	Entreprise	I.U.T.	Entreprise
08-oct	I.U.T.	I.U.T.	I.U.T.
15-oct	I.U.T.	Entreprise	I.U.T.
22-oct	Entreprise	Entreprise	Entreprise
29-oct	Entreprise	Entreprise	Entreprise
05-nov	Entreprise	Entreprise	Entreprise
12-nov	I.U.T.	I.U.T.	I.U.T.
19-nov	I.U.T.	I.U.T.	I.U.T.
26-nov	I.U.T.	I.U.T.	I.U.T.
03-déc	I.U.T.	I.U.T.	I.U.T.
10-déc	Entreprise	Entreprise	Entreprise
17-déc	Entreprise	Entreprise	Entreprise
24-déc	Entreprise	Entreprise	Entreprise
31-déc	Entreprise	Entreprise	Entreprise
07-janv	Entreprise	Entreprise	Entreprise
14-janv	I.U.T.	I.U.T.	I.U.T.
21-janv	I.U.T.	I.U.T.	I.U.T.
28-janv	I.U.T.	I.U.T.	I.U.T.
04-févr	I.U.T.	I.U.T.	I.U.T.
11-févr	Entreprise	Entreprise	Entreprise
18-févr	Entreprise	Entreprise	Entreprise
25-févr	Entreprise	Entreprise	Entreprise
04-mars	Entreprise	Entreprise	Entreprise
11-mars	I.U.T.	I.U.T.	I.U.T.
18-mars	I.U.T.	I.U.T.	I.U.T.
25-mars	I.U.T.	Voyage d'Etudes	I.U.T.
01-avr	I.U.T.	I.U.T.	I.U.T.
08-avr	Soutenance	I.U.T.	Entreprise
15-avr	Entreprise	Soutenance	Soutenance
22-avr	Entreprise	Entreprise	Entreprise
29-avr	Entreprise	Entreprise	Entreprise
06-mai	Entreprise	Entreprise	Entreprise
...	Entreprise	Entreprise	Entreprise
12-juin	Entreprise	Entreprise	Entreprise
17-juin	Entreprise	Entreprise	Entreprise
24-juin	Entreprise	Entreprise	Entreprise
...	Entreprise	Entreprise	Entreprise
	Soutenance	Soutenance	Soutenance

2019				
Mai	Juin	Juillet	Aout	Septembre
Fête du travail	1 S	1 L	1 J	1 D
	2 D	2 M S14	2 V	2 L
	3 L	3 Me	3 S	3 M
	4 M S12	4 J	4 D	4 Me
	5 Me	5 V	5 L	5 J
	6 J	6 S	6 M	6 V
	7 V	7 D	7 Me	7 S
8 mai	8 S	8 L	8 J	8 D
	9 D	9 M S15	9 V	9 L
	10 L Pentecôte	10 Me	10 S	10 M Soutenances
	11 M	11 J	11 D	11 Me
	12 Me S13	12 V	12 L	12 J
	13 J	13 S	13 M	13 V
	14 V	14 D F. Nationale	14 Me	14 S
	15 S	15 L	15 J Assomption	15 D
	16 D	16 M	16 V	16 L
	17 L	17 Me	17 S	17 M
	18 M	18 J	18 D	18 Me
	19 Me	19 V	19 L	19 J
	20 J	20 S	20 M	20 V
	21 V	21 D	21 Me	21 S
	22 S	22 L	22 J	22 D
	23 D	23 M	23 V	23 L
	24 L	24 Me	24 S	24 M
	25 M	25 J	25 D	25 Me
	26 Me	26 V	26 L	26 J
	27 J	27 S	27 M	27 V
	28 V	28 D	28 Me	28 S
	29 S	29 L	29 J	29 D
Ascension	30	30 M	30 V	30 L
IUT fermé		31 Me	31 S	

Professional Licenses

- Examples of missions :

- Design of a robotic cell integrating a set of cameras + lights for automotive part inspection.
 - Design of a fixed inspection station with robot-mounted part.
-
- In a defined technical perimeter, animate project developments. To do this, through indicators to build and maintain, through meetings and interviews, give the right information, set priorities, detect anomalies and alert. Regularly, perimeter synthesis is to be developed and presented.
 - In this same area, on vehicle functions already in production, animate the capacity actions, which allow to match the needs of the internal plants, with the possibilities of our suppliers.

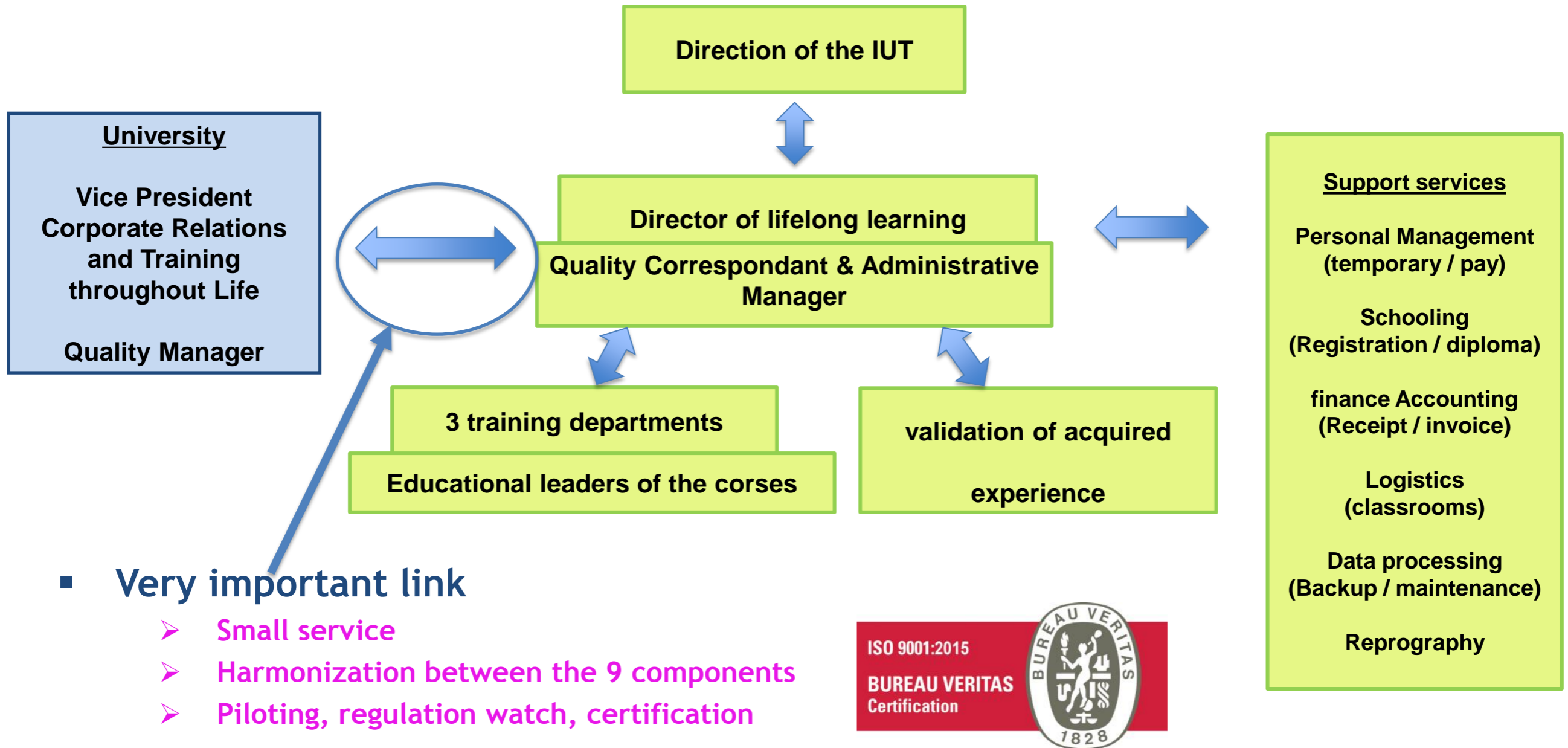
Specificities of the Industrial Management and Logistics License

A license with an international dimension

- A study trip organized by students as part of project management (destination, financing, company visits, transport and accommodation)
 - 2017 : Slovakia (VW Bratislava, PSA Trnava, Faurecia Hlohovec, Saint Gobain Nitra, Courbis Sereid, Audi Győr and French Embassy)
 - 2018 : Slovenia and Austria
 - 2019 : Poland

- Starting a lifelong learning course in Tangiers in Morocco
 - French diploma, registration at IUT, all classes take place in Morocco
 - 40% of classes provided by IUT (at the weekend, French teachers go to Tangier)
 - A agreement (pedagogical, financial, legal methods) signed by the School Direction and the Presidency of the University

Organization lifelong learning – IUT Cachan



Very important link

- Small service
- Harmonization between the 9 components
- Piloting, regulation watch, certification



+ Connections

- IUT Directors' Meeting → lifelong learning Working Committee
- Regional Assembly of IUT Directors → Project to federate training actions

Examples of Continuing Education

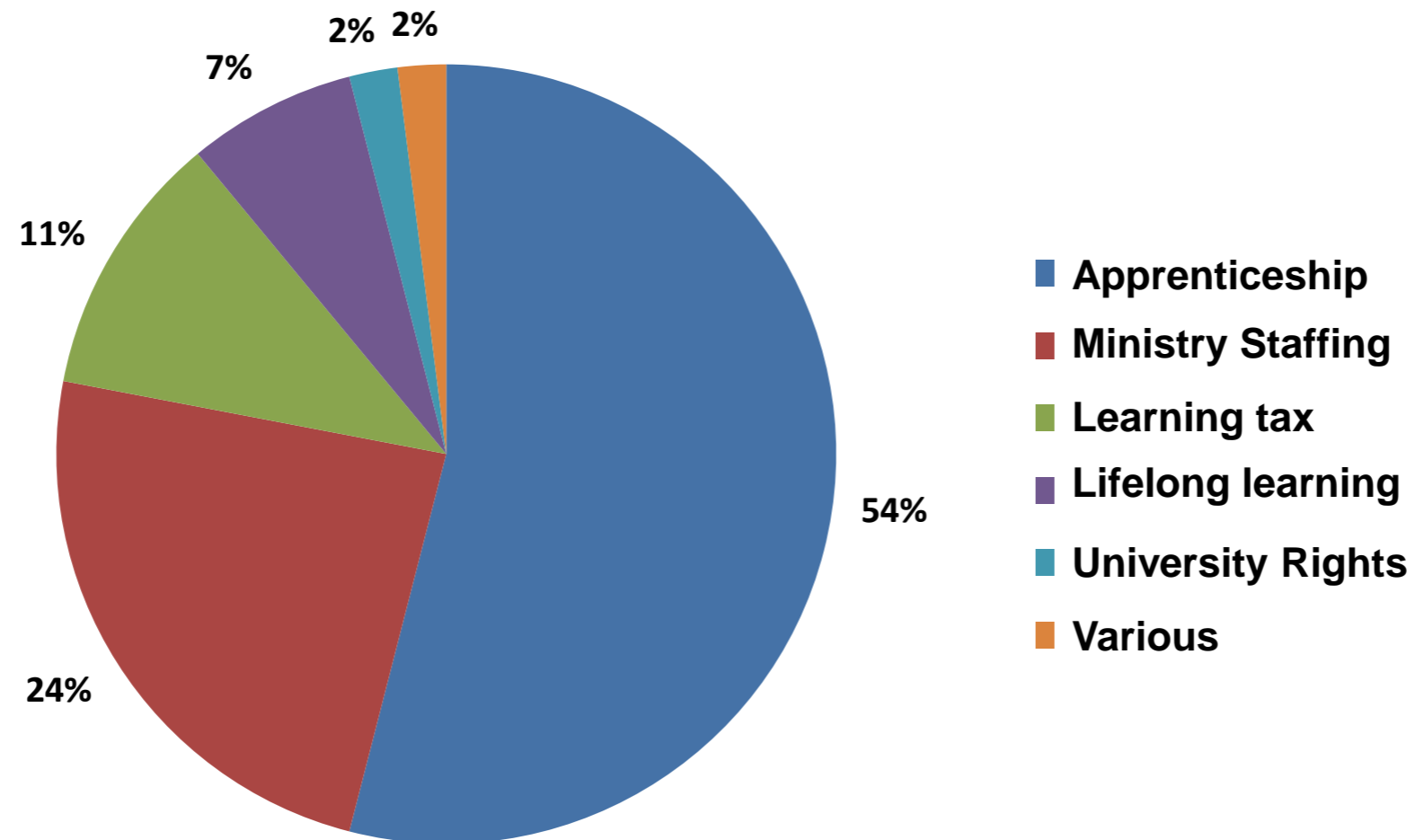
- **Trainee registered in DUT or Professional License**
 - Business Employees, Job Applicants
 - The group of License in Morocco
 - The validation of acquired experience
- **Diploma created on request (DU University Diploma)**
 - Railway Engineering Domain, transition from senior technicians to managing technicians
 - Over 1 year, 560h of training + 4 months internship
 - Training conducted in partnership (2 IUT)
 - Has been running for 14 years, 150 people trained, 94% graduates
- **Short courses**
 - Mechanical manufacturing concepts for buyers (3 days, 5 years done)

validation of acquired experience

An example

- Maintenance Technician in the field of lifts, 51 years old, a Bac level
 - Occupied positions: maintenance, installation, modernization consultancy, sales representative, sales manager for new installations.
- 37 years of experience including 9 years in sales
- Social plans = job applicant
 - Application for Validation of Acquisitions in Professional Technical-Commercial License
 - Application deemed admissible
 - 8 months of work on the file
 - Total validation of the License by the board
 - Working as a group leader

The consequences of these actions on the budget



Conclusion

Apprenticeship, interaction with companies, Lifelong learning
, validation of acquired experience,

This is an obligation since the creation of IUTs

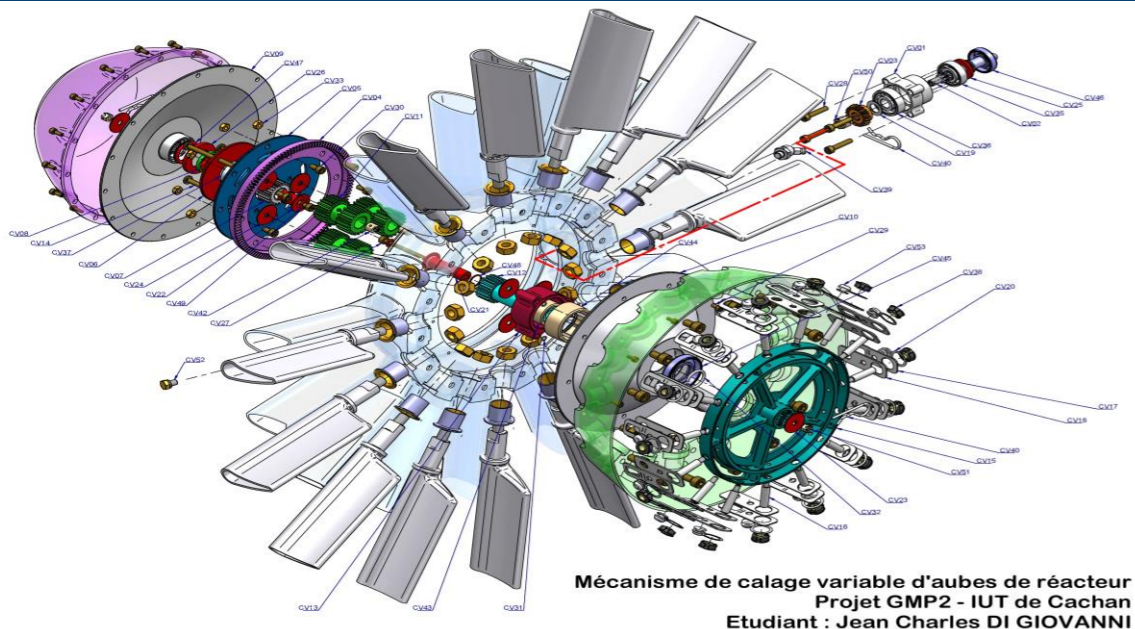
This is essential for IUTs

It's motivating, rewarding,

This forces teachers to have a different look and a permanent
adaptation

Finally we are in a context of strong mutation

- Reforming vocational training in France
- Evolution towards a new DUT in 3 years ?
- Becoming a part of a huge University



Thank you for your attention

