

SUSTAINABLE EChemTest®: OLD AND NEW MISSIONS

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1) PREAMBLE: SUSTAINABLE ECHEMTEST+ (AS FROM DECEMBER 2019 AC)

This document reports on the status of ECHEMTEST+ (illustrated by the Virtual Education Committee (VEC) at the Administrative Council (AC) meeting of ECTN on December 6, 2019) and on the actions taken accordingly (see “On the sustainability of EChemTest Mission Accomplished?” circulated in February).

a) The ECHEMTEST+ design (2015): at the Ljubljana AC the cost for *providing 10 Universities with 100 Self Evaluation Sessions (SES)s each, for supporting the VEC and the Questions & Answer (Q&A)s Library committees activities* was estimated to be **120€** per SES. The cost was deemed unsustainable and the **ECHEMTEST+** special project was launched leveraging a collaborative **Prosumer (Producer+Consumer)** scheme based on:

a1) ECTN: (PRODUCER) manages directly/indirectly EChemTest® activities e.g.

Coordination of TCs, Libraries, e-test software, etc., **(CONSUMER)** makes use of the facilities and competences of the TCs for its own use;

a2) ECTN member University having signed the related MoU (Memorandum of Understanding): (PRODUCER) supports upon request EChemTest® activities **through** its own facilities and competences, **(CONSUMER)** runs a TC for its own academic use;

a3) AGENCY having signed the related MoU: (PRODUCER) acts as market spinner for commercial and third party activities on ECTN and TCs behalf, runs upon request services for ECTN activities, handles the mechanism of debits offsetting through credits.

b) The ECHEMTEST+ minimal cost implementation (2016): in order to get the project ECHEMTEST+ started it was decided to:

b1) adopt the **LibreEOL** cloud manager of SES (University of Perugia fee 2.5 k€/year down from the 8 k€/year of QM, no limits to TC number, no restriction to Academic use)

b2) introduce debits/credit offset and non Academic services (e.g. Proficiency certificates), through the portal **Chem-Learn** of Master-UP (cost 3k€/year)

b3) provide **VEC** with 3k€/year and **active TC (MoU signatory)** with discounted SES

b4) allocate a special fund of 25k€ to incentivize ECHEMTEST+

2) ECHEMTEST+ MISSION ACCOMPLISHED

The key goals (reduction of overall costs and increase of the number of official ECTN TCs) of ECHEMTEST+ have been reached (see Figure below) within minimal costs

TCs

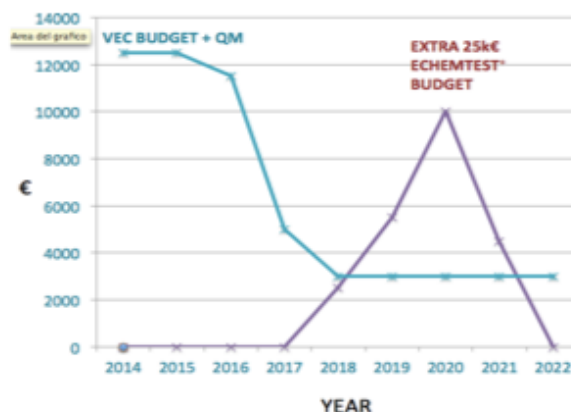
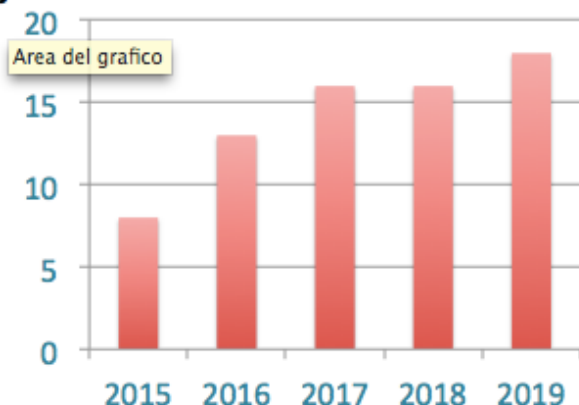


FIGURE 1 – (LHS) TCs’ NUMBER - (RHS) ECTN FINANCIAL SUPPORT VS YEAR

a) Accounting of delivered SESs (2017-19): 2018 and 2019 TC reports given in Figures 2 and 3 (see [1] for 2017) tell us that a total of **2514**, **2622** and **2544** SESs were run.

<i>Reports for the year: 2018 (closed)</i>	Q1. Number of own sessions run (with no errors)	Q2. Number of sessions run on behalf of other ECTN Members	Q3. Number of sessions run on behalf of ECTN	Q4. Number of sessions run on behalf of an external Institution	Q5. Number of sessions run by any other ECTN Member on my behalf	Q6. Number of hours spent for creating a new library's question	Q7. Number of hours spent for correcting an existing library's question	Q8. Number of hours spent for dissemination activities	CREDITS / DEBITS
NTC.HU	503	0	96	0	0	0	0	0	-1298.50
NTC.AT	546	0	0	0	0	0	0	0	-1561.00
NTC.NL	49	0	0	0	0	0	0	2	0
NTC.RU	123	0	0	0	0	0	20	0	-160.00
NTC.PL	181	411	0	0	0	0	0	0	74.5
NTC.SI	10	0	0	0	0	0	5	0	0
NTC.GR	48	0	0	0	0	0	0	2	0
NTC.SP	0	0	0	0	0	0	25	0	0
ATS.PERUGIA.IT	85	0	0	0	0	0	0	0	0
ATS.MILANO.IT	549	0	0	0	0	0	0	20	-1501.50
ATS.GENOVA.IT	39	0	0	0	0	0	0	0	0
ATS.NAPOLI.IT	0	0	0	0	0	0	0	0	0

FIGURE 2 – TCS' REPORT OF THE YEAR 2018

<i>Reports for the year: 2019 (last update: 2020/02/26)</i>	Q1. Number of own sessions run (with no errors)	Q2. Number of sessions run on behalf of other ECTN Members	Q3. Number of sessions run on behalf of ECTN	Q4. Number of sessions run on behalf of an external Institution	Q5. Number of sessions run by any other ECTN Member on my behalf	Q6. Number of hours spent for creating a new library's question	Q7. Number of hours spent for correcting an existing library's question	Q8. Number of hours spent for dissemination activities	CREDITS / DEBITS
NTC.HU	401	0	201	0	0	0	0	0	-819.00
NTC.AT	368	0	0	0	0	0	0	0	-938.00
NTC.NL	42	0	0	0	0	0	0	2	0
NTC.RU	117	0	0	0	0	5	1	4	-135.00
NTC.PL	246	0	342	0	0	0	0	0	-112.00
NTC.SI	0	0	0	0	0	0	0	0	0
NTC.GR	0	0	0	0	0	0	0	0	0
NTC.SP	0	0	0	0	0	0	15	10	0
NTC.BO	60	0	0	0	0	0	50	30	0
ATS.PERUGIA.IT	56	0	0	0	0	0	0	0	0
ATS.MILANO.IT	711	0	0	0	0	0	0	0	-2138.50
ATS.GENOVA.IT	0	0	0	0	0	0	0	0	0
ATS.NAPOLI.IT	0	0	0	0	0	0	0	0	0

FIGURE 3 – TCS' REPORT OF THE YEAR 2019

a1) CREDIT/DEBIT ITEMS: In Figures 2 and 3 column Q1 shows SESs run for its own University, Q2 SESs run for another ECTN member, Q3 SESs run for ECTN, Q4 SESs run for a third party, Q5 SESs run by somebody else on behalf of the reporting institution while Q6-Q8 show hours spent in other activities useful to ECTN.

a2) TC OVERALL CREDITS/DEBITS: The rightmost column shows the resulting credit (green) or debit (red) including the bonus of the first 100 free SESs (as from the MoU) assuming that the related University is actively contributing.

a3) THE ECHEMTEST+ BUDGET: Figure 4 plots the net result on the budget together with credits/debits due to other items (some of which are commented later) together with the minimized cost of the project confirming a substantial break-even.

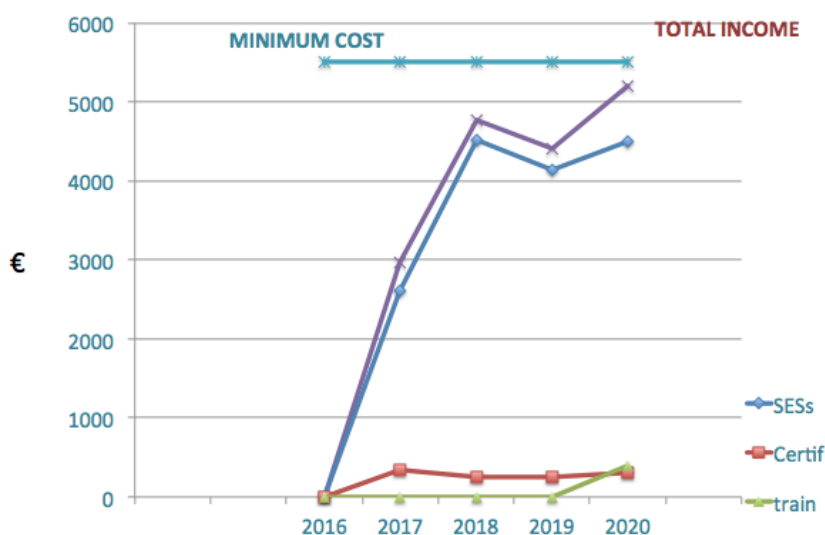


FIGURE 4 – THE ECHEMTEST+ BUDGET TIME EVOLUTION

3) FURTHER CONSIDERATIONS ON SUSTAINABILITY (2020)

a) THIRD PARTY INCOMES: An important novelty of the **ECHEMTEST+** project is the possibility of generating incomes through the services provided to third parties.

a1) The case of the **Individual Proficiency Certificates (IPC)** issued, upon request, to people passing a SES issued before February 2020 are listed in Figure 5 below.

Number of emitted certificates (last update: 2020/02/14)	2017	2018	2019	2020
NTC.HU	0	0	0	0
NTC.AT	0	0	0	0
NTC.NL	0	0	0	0
NTC.RU	0	0	0	0
NTC.PL	0	0	0	0
NTC.SI	0	0	0	0
NTC.GR	0	0	0	0
NTC.SP	0	0	0	0
NTC.BL	0	0	0	0
ATS.PERUGIA.IT	9	14	10	3
ATS.MILANO.IT	14	2	7	0
ATS.GENOVA.IT	0	0	0	0
ATS.NAPOLI.IT	0	0	0	0

FIGURE 5 – IPCs ISSUED BY THE AGENCY

People passing an EChemTest SES can purchase an IPC from the Agency (1/3 of the net gain generated by the issuing of certificates goes to ECTN itself and 1/3 is accumulated by ECTN on behalf of the TC where the test has been passed). This income is already incorporated in the plot of Figure 4 and, according to the case of Perugia shown in Figure 5, it is possible that up to 1/3 of the people passing the test purchase the IPC.

a2) Another interesting perspective is the running of SESs for third parties like companies and Associations. In this respect an **offer has been made to EuChemS (with no success** even if some progress has been made with the Polish Chemical society for the use of the Chemistry for every day life SESs).

b) MISSING/WRONG/UNAUTHORIZED TC DECLARATIONS:

The SESs provided by LibreEOL during the year 2019 are listed in Figure 6 below.

b1) The SESs declared as run in the year 2019 through the ad hoc e-forms by the TC coordinators is, instead, lower (about 700 less, see Figure 3). This corresponds to a missing additional income of about 2.5k€.

Subgroup	# of SESs
ats.at	477
ats.bo	1
ats.genova.it	109
ats.gr	42
ats.hu	749
ats.milano.it	786
ats.nl	53
ats.perugia.it	47
ats.pl	618
ats.ru	117
ats.si	68
ats.siena.it	48
ats.ucm.sp	139
Total	3254

FIGURE 6 – SESs RUN BY THE VARIOUS TCS (O. Gervasi, private communication)

b2) in Figures 2 and 3 (resulting from the TC coordinators self-declarations for the years 2018 and 2019) are declared SESs performed either for ECTN or for ECTN members (evidenced in blue) lacking of the corresponding documentation either of request or authorization. The solution of this problem might also generate additional incomes.

4) BACK TO FUTURE: DELIBERATES AND ACTIONS TO BE TAKEN

The abrupt upsurge of COVID 19 has forced us not only to postpone the 2020 GA but also to redesign short and long-term perspectives. Some questions and some possible answers are provided below for **DELIBERATION by the AC**.

a) PRESENT BUDGET: By referring to figures reported above (though still to be either confirmed or modified):

- **a1) When the Agency Master-UP should ask ECTN to be invoiced for the sharing of the IPCs net gain?** Before the GA of the following year
- **a2) When the TCs should be billed for the SESs run?** Before the GA of the following year (if numbers are not provided the LibreEOL ones will be used)
- **a3) When ECTN should pay the Department of Mathematics and Computer Science for the use of LibreEOL on the cloud?** Before the GA of the following year
- **a4) When the cost of Chem Learn should be billed to ECTN?** Before the GA of the following year
- **a5) What is the deadline for TCs to regularize planning and reporting e-forms?** Maximum two months after the end of the related year

b) RULES FOR TC and LIBRARY COORDINATORS (as from MoU)

- **b1) TC coordinators (or a deputy) must attend the joint meeting at the GA on their own expenses in order to get SES free and/discounted prices** Yes
- **b2) TC must ensure at least an expert for one library to be considered for discounts** Yes
- **b3) TC must facilitate the issuing of IPCs** Yes they can be used as preferential titles for mobility grants, for recommendation to international companies, ...
- **b4) TC must sign the proper MoU in order to be able to run SESs** Yes
- **b5) Individual contributions to Q&A Libraries are admitted only through TCs** Yes

c) RULES FOR PLANNING and REPORTING

- c1) No Deviations from LibreEOL data larger than 10% is accepted Yes
- c2) Plans for accumulating Credits for EChemTest activities need to be specified in the planning e-forms Yes

d) PREPARING NEXT GA

- d1) Move the joint meeting TC and Library coordinators to the afternoon of the first day of the GA and at least a deputy for each TC should attend Yes
- d2) TC can offset debits through authorized credits gaining activities Yes
- d3) Would you like that EChemTest moves further into the cloud activities of the European Open Science Cloud (EOSC) initiative? Yes
- d4) Would you like that ECTN members are involved in further developing EChemTest and Learning Objects in the EOSC project MOSEX (Molecular Open Science Enabled Cloud Services (see attached file GARR submitted)? Yes
- d5) Would you like that an offer for third party use of EChemTest is made to Euchems? Yes
- d6) Would you like that contacts with TCs and Library coordinators not complying with the duties specified in the MoU are discontinued? Yes

References

1] A. Laganà, O. Gervasi, S. Tasso, D. Perri, and F. Franciosa, The ECTN Virtual Education Community prosumer model for promoting and assessing chemical knowledge, Lecture notes in Computer Science 964, 533-548 (2018)