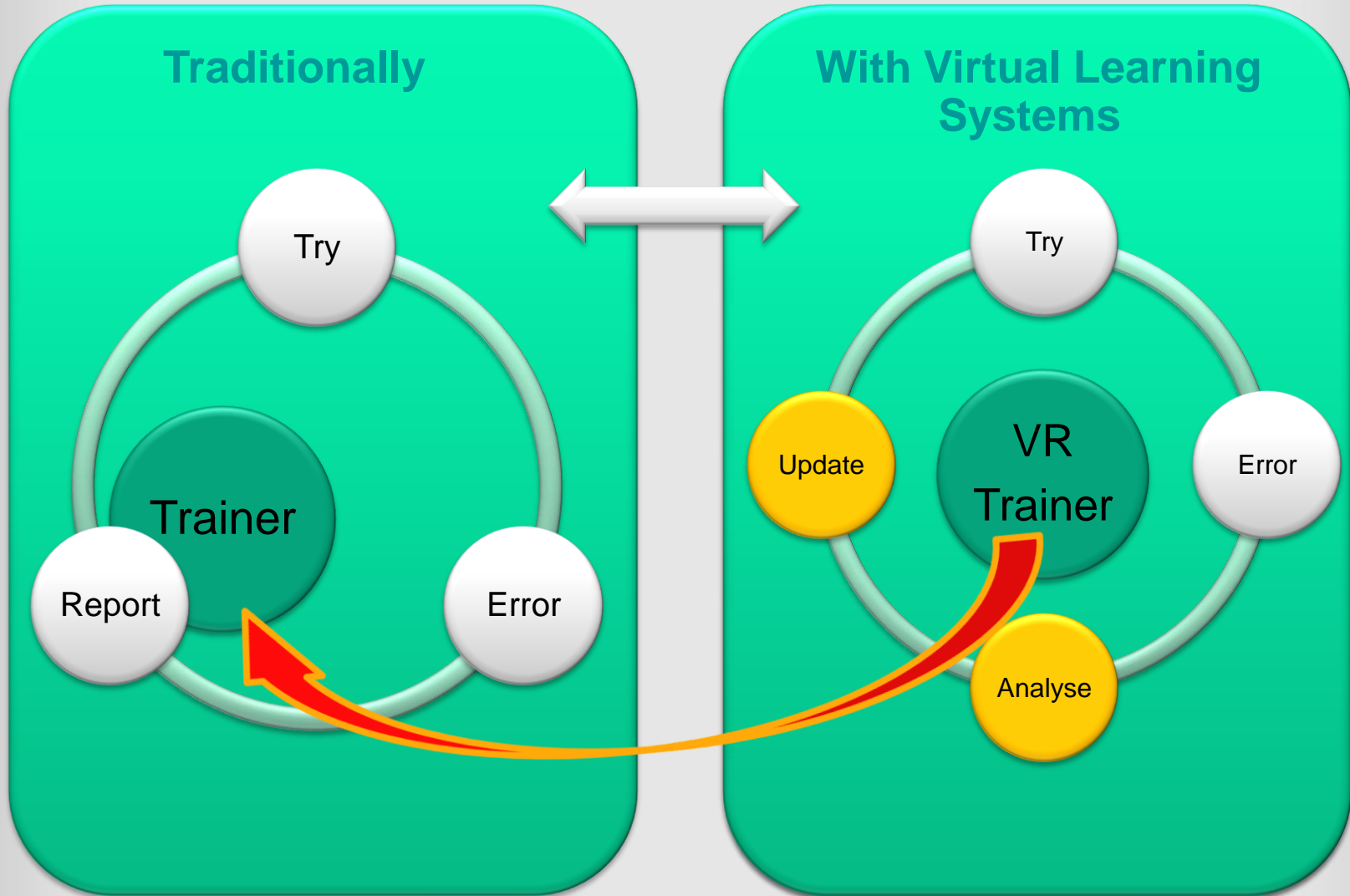


The use and benefits of Virtual Reality tools for the welding training



Improvement of the learning





WORKBENCH

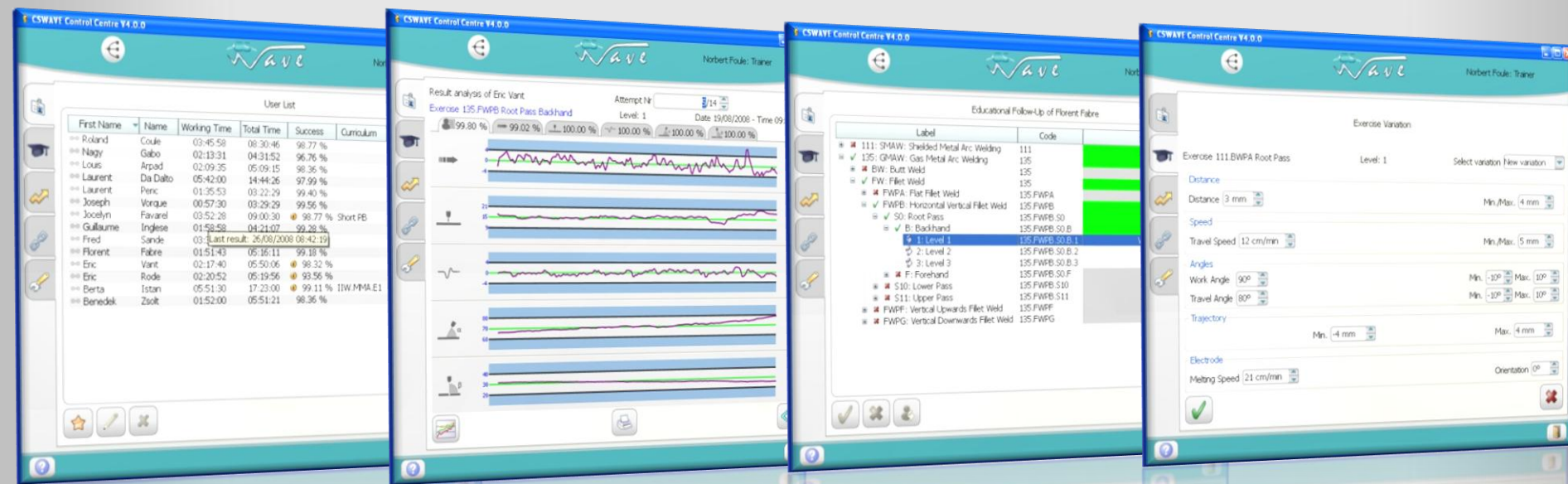
*Steady version to
Be installed in a workshop*



LITE

*Mobile version for on-site
training and demonstration*

- The **Control Centre** is CS WAVE training management module
- All CS WAVE products come with a **Control Centre** license



Students follow-up

Results analysis

Learning progress

Exercise modeler



- **INTEGRATION in the TRAINING PROGRAM**
 - Version 3 is mainly used for beginners
 - Also used as a motion control tool for expert (CATERPILLAR, ...)
 - 30 to 45 mn per session, up to 12 students per day
 - Fully integrated in the workshop, beside the welding cabin
 - Promote individual and self-training behaviour
- **BENEFITS**
 - For a training centre
 - Up to **40 %** of raw material
 - Up to **50 %** of the initial training duration
 - For the industry
 - Up to **90 %** of raw material
 - Up to **70 %** of the training duration

May 2010

- **Objectives**

- Provide control of the motion learning over the full training program (curriculum)
- Assist the trainer in designing and following each student individually

- **With 2 main concepts:**

- The CURRICULUM : sequence of exercises to go through during the student learning program
- The TRAINING PATH : Type of progressive learning associated to an exercise and a student

- **Embedding the standards:**

- IIW curriculum
- ANB or CORPORATE standards (user-defined models)

- 2006. August – Gabor Baross Innovation Program of National Research Found
- 2007. CS WAVE integrated in the practical welding training by MATRAI (NQR welders training)
- 2008. the revolution has started in the welder's and engineer's training in Hungary
- 2010. most important secondary schools are equipped with CS WAVE



... 1 of our important goals are the savings ...

Denomination of the qualification	2006.			Cost
	Number of the examinees	Succeed examinations	Savings	
EWP	8	8	SAVING: 32%	1.530,- EURO/person - 144 hours
IWP	8	8	SAVING: 32%	1.530,- EURO/person - 144 hours
IW	4	4	SAVING: 35%	1.530,- EURO/person - 144 hours
NQR welders	41	54	SAVING: 38%	670,- EURO/process/person - 120 hours 1.870,- EURO/process/person - 500 hours
NQR Welding trainers	13	27	SAVING: 30%	MIG/MAG I. 690,- EURO MIG/MAG II. 810,-EURO MMA I. .850,- EURO MMA II. 935,- EURO TIG I. 880,- EURO TIG II. 970,- EURO Trainer course I. 136 hours Trainer course II 216 hours

...the only way to train well qualified welders is to make them practice constantly ...

Denomination of the qualification	2007.			Cost
	Number of the examinees	Succeed examinations	Savings	
IWP	31	31	SAVING: 32%	1.560,- EURO/ person
IW	7	7	SAVING: 35%	1.530,- EURO/person - 144 hours
NQR welders	89	113	SAVING: 35%	690,- EURO/process/person - 120 hours 1.940,- EURO/process/person- 500 hours
NQR Welding trainers	14	21	SAVING: 30%	MIG/MAG I. 750,- EURO MIG/MAG II. 880,-EURO MMA I. .910,- EURO MMA II. 995,- EURO TIG I. 940,- EURO TIG II. 1070,- EURO Trainer course I. 136 hours Trainer course II 216 hours

... we managed to create an effective training, which is a proper mixture of simulation and real welding...

Denomination of the qualification	2008.			Cost
	Number of the examinees	Succeed examinations	Savings	
IWP	20	20	SAVING: 30%	1690,- EURO/ person SAVING: 30%
IW	32	45	SAVING: 35%	850,- EURO/ person(140 hours - fillet welders)
NQR welders	6	8		
NQR Welding trainers	6	8	SAVING: 30%	-
Part-time training for welders according to the new NQR	20	18	SAVING: 35%	1690,- EURO/ person SAVING: 30%

...we believe that by using CS WAVE, the functional training of welding has new basis, and brings remarkable improving in the level of preparedness...

Denomination of the qualification	2009.			Cost
	Number of the examinees	Succeed examinations	Savings	
IWP	32	32	SAVING: 30%	1690,- EURO/ person
IW	36	53	SAVING: 35%	-
NQR welders	64	64	SAVING: 38%	-
Part-time training for welders according to the new NQR	20	18	SAVING: 35%	2.240,- EURO/ fperson - 870 hours 2.540,- EURO/person - 960 hours



...studious trainees are on the top of the profession...

... the MATRAI has been using the CS WAVE since 2006 – as alternative training method – in the training of welding with great success, and one of its important result appeared in 2010.





-VIRTWELD project

-WELDTRAINER 2010.



Laurent DA DALTO
+33 561 176 496
laurent.dadalto@diginext.fr



Ferenc BENUS
+36 20 9292-026
matraheg@t-online.hu

