Education and Culture
Lifelong learning programme
COMENIUS

MINUTE FOR GROUP WORK
COMENIUS School Partnerships

"European CNC-Network – Train for EUROPE – RELOADED"

Meeting Description	Second Project Meeting in Lisbon (Portugal)
Meeting hosted by	CENFIM

Date / Time / Place	Thursday, 8th March 2012
Name of Workline	Workline A – locomotive
Name of Workgroup	Workgroup 4

Representative workgroup member	[NO] Stig Mårstad
Co-representative workgroup member	[FR] Nicolas Prime
Co-representative workgroup member	[TK] Mustafa Basardal

Further workgroup members	[NO] Marte Y. Fossum [NO] Hanne S. Garnvik [NO] Anja S. Helmersen [NO] Martin Nordheim [NO] Dennis Kjølsø [NO] Heidi Waterloo [NO] Stig Mårstad
	[FR] Lois Cadaux [FR] Paul Gayraud [FR] Nicolas Prime [FR] Thibault Oms [FR] Oustalet Romain [FR] Michel Frezouls
	[TK] Mustafa Basardal [TK] Túrkan Cil [TK] Selcuk Yildiz
	[SK] EVA Kalitorakova [SK] Josef Bordac [SK] Bekim Cazimi
	[BE] Niels Gybels [BE] Maarten Daems [BE] Jef Van Gorp [BE] Bram Vleugels [BE] Dirk Tormans
	[HDH] Floridan Planthaler [HDH] Christina Lohmayer [HDH] Stephan Eylsen

Minute written by	[NO] Heidi Waterloo

T4EU-R PT A Locomotive 4 Thu.doc

Description of work progress: **Topics / Tasks / Results / Decisions / Facts of importance**	**Responsible school(s) or person(s) incl. deadlines**
Topic: Locomotive Task: Designing, planning and production of the locomotive - type and size engine - gear transmission an shaft mechanism/gear unit - number of (driven) axles - materials used - outwards appearance/outward design - (remote) controlling Power supply ideas: • DC Battery (lithium, lead) • Extra wagon for battery? (lithium battery) • Go around 5 rounds, one hour or more of running time, reload? • Wagon weigh limit: (900 g, **3 kg**) • AC-power • Steam engine • Compressed air • Difficult to have enough power for the whole train last time, electricity the best (?) • 25 wagons → 25 kg * 3 = 75 kg • Combination of steam and electricity • Calculate how much energy we need to pull the train for one hour • Calculate the engine power and torque, and find the engine type • Train speed: - Length of the track: 2 * pi * 3 m + 14 m = 33 m - Time for one turn: 2 min-> 1 km/h, 5 min → 0,4 km/h, - Train total length: 8 m long - Define a maximum speed, and then have the opportunity to reduce the speed: 1 km/h • Remote control - Bluetooth (cell phone) - Infrared • Power transmissions from wheels to track: - 2 driven axles, 4 wheels - 1 motor or two per axles?	Homework for every country: Calculate the engine power and find the engine type [NO] Steam engine – is it possible? Homework: calculate and make a conclusion if it is possible (to the next meeting) [BE] Remote control Homework: look into the remote control to the next meeting

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"European CNC-Network – Train for EUROPE – RELOADED"

Meeting Description	Second Project Meeting in Lisbon (Portugal)
Meeting hosted by	CENFIM

Date / Time / Place	Friday, 9th March 2012
Name of Workline	Workline A – locomotive
Name of Workgroup	Workgroup 4

Representative workgroup member	[NO] Stig Mårstad
Co-representative workgroup member	[FR] Nicolas Prime
Co-representative workgroup member	[TK] Mustafa Basardal

Further workgroup members	[NO] Marte Y. Fossum [NO] Hanne S. Garnvik [NO] Anja S. Helmersen [NO] Heidi Waterloo [NO] Stig Mårstad [NO] Lena Mari Roos Skjervold
	[FR] Lois Cadaux [FR] Paul Gayraud [FR] Nicolas Prime [FR] Thibault Oms [FR] Oustalet Romain [FR] Michel Frezouls
	[TK] Mustafa Basardal [TK] Túrkan Cil [TK] Selcuk Yildiz
	[SK] Eva Kalitorakova [SK] Josef Bordac [SK] Bekim Cazimi
	[BE] Niels Gybels [BE] Maarten Daems [BE] Jef Van Gorp [BE] Bram Vleugels [BE] Dirk Tormans
	[HDH] Floridan Planthaler [HDH] Stephan Eylsen

Minute written by	[FR] Romain Oustalet

T4EU-R PT A Locomotive 4 Fri.doc

Description of work progress: **Topics / Tasks / Results / Decisions / Facts of importance**	**Responsible school(s) or person(s) incl. deadlines**
Topic: Locomotive • Locomotive weigh • Mechanical transmission: - Chain or belt/pulley • Electric team: BE; HDH; TK. This team works on motor type, remote control, power supply. • Mechanic team: BE; NO; SK; FR; TK. This team works on 3D model, undercarriage, transmission, wheels and body. • Schedule: - Slovenia: 1st technical solution - Finland: 1st part • Calculation of the motors • • Material: - Steel: heavy weight - Batteries: inside or outside the locomotive - Parts: Wheels: tests have to be done Body: old train by CNC (19) or modern train (5) (other vote in Slovenia) Dimensions of locomotive: length: 400 mm - width: 100 mm	25th march