

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



AECENAR

Association for Economical and Technological Cooperation
in the Euro-Asian and North-African Region

www.aecenar.com

AECENAR Administration Planning & Controlling 2014

Last update:

Monday, January 05, 2015

Authors:

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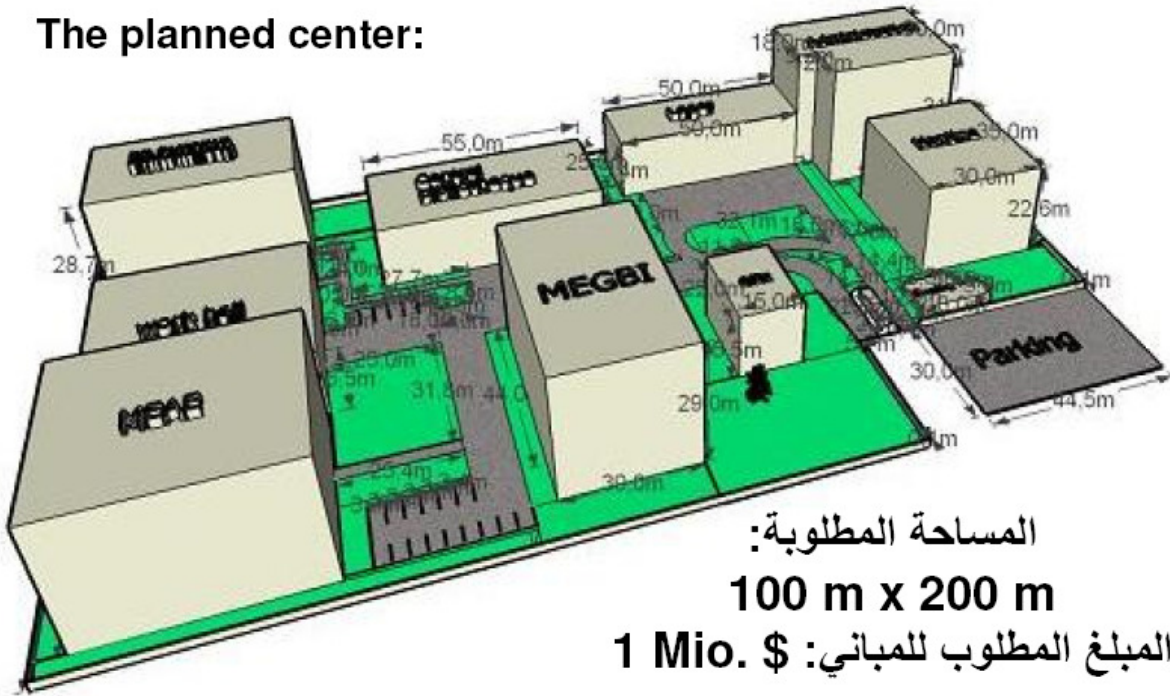
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How did in 2014 move the project of a AECENAR applied research and startup-companies center?

The planned center:



- One of three institutes has been completed (MEAE with TEMO-IPP demonstration power plant)
- One project (TEMO-IPP) is now ready for commercialization in a start-up company
- Better connection to Lebanese University and Lebanese academic community (LASER)

1 AECENAR Facility

1.1 Inventory 2014

1.1.1 Furniture

AECENAR
Inventar Stand Dez 2012

Möbel Listen

Institut	aktuelle Örtlichkeit	Geplante Örtlichkeit	Umzugs- datum	Gegenstands- beschreibung	Firmen/ Typenbezeichnung	Inventarnummer	geschätz- ter Wert (in USD)
MEGBI	AECENAR			4 Tische a-f	a- b- c- d- e-	AECENAR.M.1.a-e	\$400
Verkauft an SM Okt 14				Besprechungstisch			80\$
	AECENAR			Ecktisch		AECENAR.M.2	\$400
Verkauft an SM 14.8.13 Rückgekauft Jan 14				hp-Laptop	hp	AECENAR.M.3	\$200
	Wohnung			Telefonapparat	Microtel	AECENAR.M.4	\$15
	Wohnung			Faxgeraet	HP Officejet All-in-one	AECENAR.M.5	\$100
	Wohnung			Telefonaschrank		AECENAR.M.6	\$20
Verkauft an SM 14.8.13 Rückgekauft Jan 14				Drucker	Samsung CLP-315	AECENAR.M.7	\$80
	Wohnung			3 Drehstuehle a-c	a-blau b-blau c-braun	AECENAR.M.8 a-c	\$50
	Wohnung			9 Plastikstuehle	beige	AECENAR.M.9	\$36
	Wohnung			3 Kommoden mit Schiebetueren a-c	b-a- c- Grau	beige AECENAR.M.10 a-c	\$300
	Wohnung			4 Kommoden mit Schubladen a-d	a- b- c- d-	AECENAR.M.11 a-d	\$80
Verkauft an SM 14.8.13	Wohnung			2 Ventilatoren a-b	a- b- beige	schwarz AECENAR.M.12 a-b	\$40
	Wohnung			2 kleine Plastiktische a-b	a- b- beige	beige AECENAR.M.13a-b	\$10
Verkauft an SM 14.8.13	Wohnung			schwarzer Sessel	Leder	AECENAR.M.14	\$70
	Wohnung			3 Chefsessel a-c	a-c Drehstühle	Schwarze AECENAR.M.15a-c	100
Verkauft an SM 14.8.13	Wohnung			Herd mit Gasflasche	klein, weiß, 3 Augen	AECENAR.M.16	\$60

			Heizung, elektro und gaz	Delonghimitic	AECENAR.M.17	\$50
	Wohnung					
	Wohnung		Kommode	klein, weiß, 3 Schubladen	AECENAR.M.18	\$10
Verkauft an SM 14.8.13	Wohnung		Garderobe	metall mit 5 Haken	AECENAR.M.19	\$20
	Wohnung		Wanduhr	metall und rund	AECENAR.M.20	\$5
Verkauft an SM 14.8.13	Wohnung		3er Couch	schwarz, Leder	AECENAR.M.21	\$200
Verkauft an SM 14.8.13	Wohnung		Kommode mit Spiegel	helles Holz und 4 Schubladen	AECENAR.M.22	\$30
Verkauft an SM 14.8.13	Wohnung		Wohnzimmer- tisch	helles Holz, 4 eckig	AECENAR.M.23	\$10
	Wohnung		2er Couch	schlafcouch, schwarz, Leder	AECENAR.M.24	\$50
	Wohnung		Bücherregal	schwarz	AECENAR.M.25	\$30
Verkauft an SM 14.8.13	Wohnung		Teppiche a-b	a- rot b- blau	AECENAR.M.26a-b	\$60
Verschenkt an syr. Flüchtlinge 06/13	Wohnung	-	Matrazen	lang und dünn	AECENAR.M.26	\$20
	Wohnung		Staubsauger		AECENAR.M.27	\$30
	Bibliothek		2 schwarze Tische	a- b- nur von eine Seite offen	AECENAR.M.28a-b	\$150
	Bibliothek		8 Plastikstühle in grün		AECENAR.M.29	\$24
	Bibliothek		4 chefsesseln	a-d Drehstühle in schwarzem Leder	AECENAR.M.30a-d	\$280
	Bibliothek		2 Holztische	schwarz und klein	AECENAR.M.31	\$40
	Bibliothek		2 Schreibtische	a- mit beige Oberfläche b- helles Holz	AECENAR.M.32a-b	\$80
	Bibliothek		Wanduhr	metall und rund	AECENAR.M.33	\$5
	Bibliothek		2 Stühle	schwarz mit metall Armlehnen	AECENAR.M.34	\$20
	Bibliothek		4 Mülleimer	a-grün b-blau c-braun d-schwarz und groß	AECENAR.M.35a-d	\$8
	Bibliothek		Ecktisch		AECENAR.M.36	\$300
	Bibliothek		2 türige Schrank	beige, metall	AECENAR.M.37	\$50
	Bibliothek		2er Couch	schwarz, Leder	AECENAR.M.38	\$50
	Bibliothek		Couchtisch	schwarz, Holz	AECENAR.M.39	\$20
	E-Werk- statt		großer schwarzer Schreibtisch	holz, L form	AECENAR.M.40	\$50
	Biotech- nikum		3 Tische	beige metall	AECENAR.M.41	\$150
	Biotech- nikum		Spüle	stainless	AECENAR.M.42	\$5
	Biotech- nikum		Ledersessel	schwarz	AECENAR.M.43	\$50
	Biotech- nikum		2 Stühle	schwarz und metall	AECENAR.M.44	30

AECENAR Facility

	E-Werkstatt		Drehstuhl	schwarzes Leder	AECENAR.M.45	\$50
	Biotechnikum		Regal	metall mit geschlossenem Rücken	AECENAR.M.46	\$30
	Biotechnikum		2 Blumen Ständer	schwarzes Holz	AECENAR.M.47	\$10
	E-Werkstatt		Kommode	Schiebetüren, metall beige	AECENAR.M.48	\$30
	Biotechnikum		2 Regale	mit offenem Rücken	AECENAR.M.49	\$20
					total	\$3.958

... 14.8.13 furniture for 720 USD was saled to Samir Mourad (AECENAR temporal Administrationin his house)

Bemerkung (Stand 4.Jan 2015): einige Gegenstaende wurden wieder nach AECENAR zurückgeführt (teilweise getauscht gegen andere). Ergebnis: AECENAR schuldet Samir Mourad disbezüglich 100 EUR.

1.1.2 Devices

AECENAR Inventar

Stand Jan 2013 (teilw. Upgedated Jan 15)

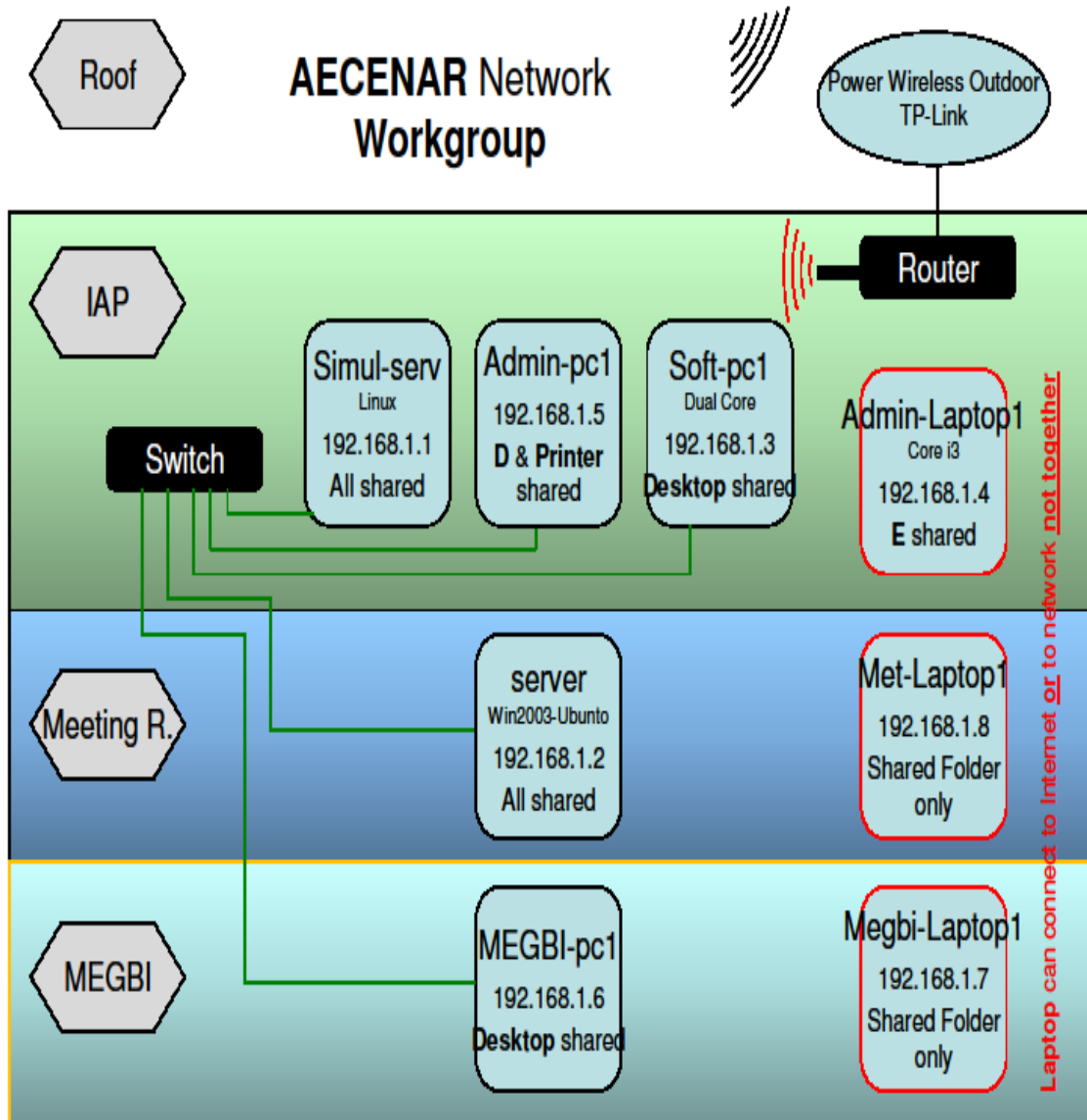
Geraete Listen

Institut	Remark	Gegenstands- beschreibung	Firmen/ Typenbezeichnung	Inventarnummer	geschätz- ter Wert (in US- Dollar)
MEGBI		Safety Cabinet	Chemocell LRCX- UV	AEC.MEG.G.1	\$6.500
		magnetrührer	VMS-C4	AEC.MEG.G.2	\$3.000
		PCR-Maschine	Primus 25	AEC.MEG.G.3	\$2.500
		Gelelektrophoresis- Einheit mit Power Supply	OWLA1 und EC3000XL	AEC.MEG.G.4a et b	\$1.000
		Schüttelinkubator	ES-20	AEC.MEG.G.5	\$2.500
		Magnetrührer, schwarz	Magnetsitrer	AEC.MEG.G.6	\$500
		Tischzentrifuge	IEC MicroCL 17R	AEC.MEG.G.7	\$4.000
		Fluoreszenz- mikroskop mit Zubehoer	L2001	AEC.MEG.G.8	\$3.000
		Wasserbad	Aqua bath	AEC.MEG.G.9	\$1.000
		Präzisionswaage	VICON	AEC.MEG.G.10	\$450
		Mikroskop, schwarz	Olympus	AEC.MEG.G.11	\$70
		Stromversorgung	Power Supply	AEC.MEG.G.12	\$50
		Ofen	binder	AEC.MEG.G.13	\$200
		5 Finnpipette	Autoclavable	AEC.MEG.G.14 a- e	\$380
		Ruettelmischer	Biovortex V1	AEC.MEG.G.15	\$170
		Kuehlschrank	BEKO	AEC.MEG.G.16	\$250
		Eisschrank -6 °C	LR25B Laboratory	AEC.MEG.G.17	\$3.000
		Centrifuge- klein	80-1	AEC.MEG.G.18	\$200
		Abzugsrohr von dem Safety Cabinet	Tubes Flexibles	AEC.MEG.G.19	
		Bioreaktor		AEC.MEG.G.20	\$6.000
		Eisschrank	-85 °C	AEC.MEG.G.21a	\$5.000
MEAE		Teststand	Temo STPP	AEC.MEA.G.22	\$150.000
		Metallständer	groß mit Glasrohr	AEC.MEA.G.23	\$550,00
		Compressor			\$150
		Elektroschweissgeraet			\$200
		Hydrogenschweissgeraet			\$120
IAP		Server_ groß und schwarz	LG super multi	AEC.IAP.G.24	\$2.000
		Serverschrank	schwarz und groß aus Metall	AEC.IAP.G.25	\$1.000
				total	\$193.790

1.1.3 Other Devices and Materials

Due to the TEMO-IPP project several new mechanical manufacturing devices and materials were bought. A detailed inventory still has to be done.

1.2 IT Infrastructure



1.2.1 Specifications:

- Internet at one isolated PC each at MEGBI, IAP and Central Library, wireless router at Central Library floor
- All other computers are connected via non-wireless intranet to server at Central Library
- MEGBI: 1 internet PC, 2 work stations
- IAP: HP Server, 2 work stations, 1 internet PC
- AECENAR Administration and Central Library: Small Server, 1 internet PC
- MEAE: 1 internet PC, 2 work stations

Total: 2 Servers, 3 internet computer, 7 working stations (PC or laptop)

1.2.2 IT Resources

- 2 Servers
- 3 PCs (DualCore, XP, Schwarz-silber)
- 2 Laptops

Institute	PC	Laptop	Server
MEGBI	Schwarz/Silber (Internet)		
Central Library			Windows Server
IAP	Dual Core		HP (for simulation)
MEAE	XP		

1.2.3 Electrical Power Requirements

	lightening [W]	computers [W]	devices [W]		Costs		
					installation	lamps	PV installation
IAP	144	600	200				
Stairs	400				\$100	\$40	
MEGBI	520		600		\$50		
Meeting Room	144	200	200				
MEAE							
sum	1208	800	1000				\$1.000

AECENAR all 3008 W

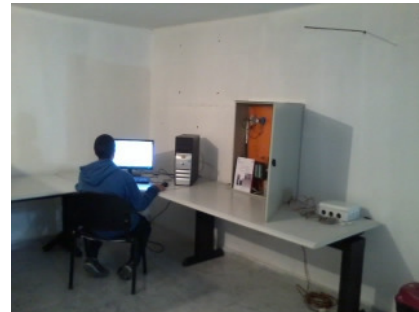
\$1.190

2 Laboratories

2.1 MEGBI



2.2 MEAE



Mechanical Laboratory, Incineration Demonstration Power Plant

2.3 IAP

Rasnhache

IAP
INSTITUTE FOR
ASTROPHYSICS

A member institute of AECENAR
www.aecenar.com/institutes/iap
 Ras Nhache / Batroun, Lebanon

AECENAR
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 in the Euro-Asian and North-African Region
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IAP Electronics and Simulation

Hardware Development Laboratory, Software Development Laboratory, Simulation Server

3 Staff

3.1 Overview

Institute	Staff	Costs
Administration	Samir (160 h/month)	Paid by TEMO-IPP project in 2014
	Abdullah (aus Halab)	About 1300 EUR in 2014 (Febr-Apr)
MEAE	Temporarily freelancers at TEMO-IPP project	
MEGBI		
IAP		

3.2 Time Schedule

Mitarbeiter	Mo	Di	Mi	Do	Fr	Sa
Mohammad	8-15h	8-15h	8-15h	8-15h		8-15h
Rafiq	8-15h				8-12h	8-15h
Abdurrahman					8-12h	
Abdullah					8-12h	
Bilal					8-12h	
Roula	8.30-12.30h	8.30-12.30h	8.30-12.30h	8.30-12.30h		8.30-12.30h
Samir	8-15h	8-15h	8-15h	8-15h	8-12h	8-15h

3.3 Contracts

4 Budget: Income / Expenditure 2014

4.1 Debits

Februar/März: Schulden 5000 \$ an Samir Mourad zurückgezahlt

Februar 14: Diyab veranlasst Kaufauflösung des Vertrags vom September 13. 20.000 EUR mussten zurückgezahlt werden.

Stand Ende Dez. 14:

...

14.10. 250 EUR ueberwiesen. Noch 14.000 EUR offen

22.12. 1000 EUR uebewiesen. Noch 13.000 EUR offen

27.12.14 500 EUR ueberwiesen. Noch 12.500 EUR offen

4.2 Expenditure

			Total
AECENAR Facility	Repairing/Cleaning		1500 USD
MEGBI			
MEAE	See TEMO-IPP project		
IAP	Material for Master Thesis of Suhaib		Ca. 450 EUR
Debits return			Ca. 11.500 EUR
Total			Ca. 13.000 EUR

4.3 Income

Item	Date	Amount
From TEMO-IPP project with LAsER		Ca. 10.500 EUR
Aus Kaufverträgen TEMO-AECENAR 2011, 2013 und 2014	Ca. Juni und Dez. 2014	Ca. 2500 EUR

5 Projects

5.1 Documentation

To manage the administration and projects work at AECENAR there are the following documents:

Institution	Document (with short description)	Frequency of appearance	Remarks
AECENAR Administration	<ul style="list-style-type: none"> - Planning (time, costs, staff) - Rough project planning for each institute Language: whole document in English and Arabic جميع التقرير بالعتين العربية الانجليزية	At the end of each year	This is the current planning&controlling document (at the end of the year the time and costs are final)
MEGBI	Project report for every project at the institute Language: abstract in Arabic, whole document in English تلخيص بالغة العربية و التقرير الكامل بالغة الانجليزية	actually MEGBI Vaccine Pilot Plant	At the end of each year All technical details needed to undergo the project at another place
MEAE		actually TEMO-IPP	
IAP		actually IAP_SAT	

5.2 Timeline Overview

ID	Name	Start	Finish	2014				2015				2016			
				Jan	Apr	Jul	Okt	Jan	Apr	Jul	Okt	Jan	Apr		
MEAE	TEMO-IPP with LAsER	03.01.2014	19.11.2014	[Timeline bar from Jan 2014 to Nov 2014]											
NLAP	Initial. of North Lebanon Altern. Power (bureau at LAsER?)	29.12.2014	28.06.2016	[Timeline bar from Dec 2014 to Jun 2016]											
	operational working of incineration plant at Ras Nhache	29.12.2014	27.08.2015	[Timeline bar from Dec 2014 to Aug 2015]											
	Commercial Project in Tripoli	24.04.2015	28.06.2016	[Timeline bar from Apr 2015 to Jun 2016]											
	Photovoltaik: Water electrolysis:Long time electricy storage with hy	26.01.2015	24.02.2015	[Timeline bar from Jan 2015 to Feb 2015]											
	BSBN (Planning of Tripoli Incineration Plant)	11.03.2015	15.06.2015	[Timeline bar from Mar 2015 to Jun 2015]											
MEGBI	MEGBI-VPP	06.11.2014	21.08.2015	[Timeline bar from Nov 2014 to Aug 2015]											
250 \$, AJ	Specification (Excellist as TEMO-STPP offer attachment to LASER)	06.11.2014	06.11.2014	[Timeline bar from Nov 2014 to Nov 2014]											
	Design Purification Machine (as AKTA process) (mech+electr.)	03.01.2015	30.01.2015	[Timeline bar from Jan 2015 to Jan 2015]											
34T\$ M.+ 6T\$ P.	Prototype Chromatogr. Process Device (mech)	08.02.2015	03.04.2015	[Timeline bar from Feb 2015 to Apr 2015]											
AJ, 4 T\$	Prototype Chromatogr. Process Device(autom)	26.03.2015	22.05.2015	[Timeline bar from Mar 2015 to May 2015]											
	DNA Lab (HBSAg DNA im Dez. besorgen): Transfer in S.ceriv.	07.06.2015	17.08.2015	[Timeline bar from Jun 2015 to Aug 2015]											
	Bioreactor integration (mech.+autom.)	09.05.2015	30.06.2015	[Timeline bar from May 2015 to Jun 2015]											
	upstream downstream (-> presentation film)	14.08.2015	21.08.2015	[Timeline bar from Aug 2015 to Aug 2015]											
LGBiotech	Initial. of LGBiotech vaccine production	23.09.2015	10.06.2016	[Timeline bar from Sep 2015 to Jun 2016]											
IAP	IAP-SAT	01.04.2014	25.06.2016	[Timeline bar from Apr 2014 to Jun 2016]											
	1. mock-up model	01.04.2014	17.04.2014	[Timeline bar from Apr 2014 to Apr 2014]											
	Specification Prototype (FCS+Surv.Sensor)	17.05.2014	29.05.2014	[Timeline bar from May 2014 to May 2014]											
	2. mock-up model of surv. IAP-SAT	17.09.2015	02.11.2015	[Timeline bar from Sep 2015 to Nov 2015]											
	prototype (Surv.-Sensor - BoardCPU - COM)	27.10.2015	03.04.2016	[Timeline bar from Oct 2015 to Apr 2016]											
	prototype (FCS) intergration from alt. Lotte system	26.12.2015	29.03.2016	[Timeline bar from Dec 2015 to Mar 2016]											
	MPD propulsion system simple prototype	06.01.2016	28.04.2016	[Timeline bar from Jan 2016 to Apr 2016]											
	SAT Ground Station: Migration from IAP_ECS (parabol antenna)	06.01.2016	25.06.2016	[Timeline bar from Jan 2016 to Jun 2016]											
	IAP_SRWDA Ground Station	30.12.2013	18.04.2014	[Timeline bar from Dec 2013 to Apr 2014]											
Administration	AECENAR Building	29.12.2015	04.07.2016	[Timeline bar from Dec 2015 to Jul 2016]											
	Searching for partners in North Lebanon	29.12.2015	04.07.2016	[Timeline bar from Dec 2015 to Jul 2016]											
ISSIR	ISSIR Zeitschrift 2nd Ed.	24.04.2016	01.07.2016	[Timeline bar from Apr 2016 to Jul 2016]											
	Zeitschrift	24.04.2016	28.06.2016	[Timeline bar from Apr 2016 to Jun 2016]											
	Vortragsreihe	09.05.2016	01.07.2016	[Timeline bar from May 2016 to Jul 2016]											

08.11.14

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ID	Name	Start	Finish	2014				2015				2016			
				Jan	Apr	Jul	Okt	Jan	Apr	Jul	Okt	Jan	Apr		
MEAE	TEMO-IPP with LAsER	03.01.2014	19.11.2014	[Timeline bar from Jan 2014 to Nov 2014]											
	establishing steady place for demo plant for incineration	03.01.2014	20.01.2014	[Timeline bar from Jan 2014 to Jan 2014]											
	integration and working of experimental plant at Qubaisi lab	21.01.2014	23.05.2014	[Timeline bar from Jan 2014 to May 2014]											
	Sucesful turbine test	12.05.2014	12.05.2014	[Timeline bar from May 2014 to May 2014]											
	Demonstration Meeting with LAsER	23.05.2014	23.05.2014	[Timeline bar from May 2014 to May 2014]											
	Construction and building of incineration based evaporator	13.05.2014	11.10.2014	[Timeline bar from May 2014 to Oct 2014]											
	incineration integration to demo plant at Qubaisi center	03.10.2014	24.10.2014	[Timeline bar from Oct 2014 to Oct 2014]											
	meeting with Liqa alkhair, film presentation	05.11.2014	05.11.2014	[Timeline bar from Nov 2014 to Nov 2014]											
	final report (including photos of liqa)	13.11.2014	19.11.2014	[Timeline bar from Nov 2014 to Nov 2014]											
NLAP	Initial. of North Lebanon Altern. Power (bureau at LAsER?)	29.12.2014	28.06.2016	[Timeline bar from Dec 2014 to Jun 2016]											
	BSBN (Planning of Tripoli Incineration Plant)	11.03.2015	15.06.2015	[Timeline bar from Mar 2015 to Jun 2015]											
MEGBI	MEGBI-VPP	06.11.2014	21.08.2015	[Timeline bar from Nov 2014 to Aug 2015]											
LGBiotech	Initial. of LGBiotech vaccine production	23.09.2015	10.06.2016	[Timeline bar from Sep 2015 to Jun 2016]											
IAP	IAP-SAT	01.04.2014	25.06.2016	[Timeline bar from Apr 2014 to Jun 2016]											
	IAP_SRWDA Ground Station	30.12.2013	18.04.2014	[Timeline bar from Dec 2013 to Apr 2014]											
Administration	AECENAR Building	29.12.2015	04.07.2016	[Timeline bar from Dec 2015 to Jul 2016]											
	Searching for partners in North Lebanon	29.12.2015	04.07.2016	[Timeline bar from Dec 2015 to Jul 2016]											
ISSIR	ISSIR Zeitschrift 2nd Ed.	24.04.2016	01.07.2016	[Timeline bar from Apr 2016 to Jul 2016]											
	Zeitschrift	24.04.2016	28.06.2016	[Timeline bar from Apr 2016 to Jun 2016]											
	Vortragsreihe	09.05.2016	01.07.2016	[Timeline bar from May 2016 to Jul 2016]											

11.11.14

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5.3 Budget Planning, last update: Jan 2014

AECENAR
Aims+Basic Costs

2014
D:\AECENAR\Administration\Planning\2014\AECENAR

Personal Specific Costs	1MM
Student	\$0
Specialized Worker	\$500
Engineer	\$2.000

		Engineer need (MM)	Specialized Worker/Facharbeiter (MM)	Student (1/2 MM)	Personnel Costs	Material Costs	Duration (months)	Needed Staff
MEGBI-VPP	ProE Model Purification Machine (as AKTA process)			1			1	1 Student (A2)
	ProE Model upstream downstream (-> presentation film)			0,5			0,5	1 Student (A2)
	Prototype Chromatogr. f	5	5	5	\$12.500	\$13.000	5	1 Engineer (medical devices/biotech, automation) 1 Specialized Worker 1 Student (A2)
	Prototype Chromatogr. Process Device(autom)	3		3	\$6.000	\$2.500	3	1 Engineer (medical devices/biotech, automation) 1 Student (A2)
TEMO-STPP	establishing steady place for demo plant integration of demo plant at new place				all in costs:	\$34.250		
	incineration integration to demo plant							
	Photovoltaik: Elektrolyse				\$4.000	\$3.000		
IAP_SRWDA-SAT	mock-up model				\$1.000	\$300	1	1 Student (A1)
	specification prototype				\$1.000		1	1 Student (A1)
	prototype (COM, FCS) aus ECS u. alt.Lotte übernehmen				\$4.000	\$1.200	6	1 Master Student (electrical engineering) 1 Student (A1)
	mission simulation				\$2.000		1	1 Student (A1)
	Specification MPD propulsion system				\$1.000		3	1 Student (A1)
	MPD propulsion system				\$5.000	\$2.000		
IAP_SRWDA-SAT Ground Station	Migration from IAP_SRWDA Ground Station				\$3.000	\$1.000	1	1 Student (A1)
IAP_SRWDA Ground Station	Integration Ground Station Prototype					\$1.000	3	1 Master Student (electrical engineering)
Administration IT								1 Student
Administration AECENAR Building	Searching for partners in North Lebanon							
					Sum Personal	Sum Material		
					\$39.500	\$58.250		

AECENAR Budget Need \$97.750

5.4 MEGBI Hepatitis Vaccine Pilot Plant (MEGBI-VPP)

5.4.1 Project Planning and Control in Jan 2014

Chromatographic Process Device
MECH

Akta process Sensors and actuators 13.12.13

Teil	Anzahl	Item Price	Price
Air trap	1		
Filter	1	50	
Filter vent valve	1		
Capsule filter bottom manual val	1		
Capsule filter top manual valve	1		
System pump	2		
Sample pump	1		
Pressure control valve	2		
Buffer A inlet valves	10		
Buffer B inlet valves	6		
Sample connection valve	1		
Sample inlets valves	2		
Air trap inlet valve	1		
Air trap bypass valve	1		
Air trap vent valve	1		
Air trap outlet valve	1		
Filter inlet valve	1		
Filter bypass valve	1		
Filter outlet valve	1		
System connection valve	1		
Column 1 top inlet valve	1		
Column 1 bottom inlet valve	1		
Column 1 top valve	1		
Column 1 bottom valve	1		
Column 1 top outlet valve	1		
Column 1 bottom outlet valve	1		
Column 2 top inlet valve	1		
Column 2 bottom inlet valve	1		
Column 2 top valve	1		
Column 2 bottom valve	1		
Column 2 top outlet valve	1		
Column 2 bottom outlet valve	1		
Outlet valves	9		
Air trap drain valve	1		
Filter drain valve	1		
CIP / AxiChrom manifold	1		
Buffer inlet air sensor	1		
Pre-column air sensor	1		
Post-column pH-meter	1		
Post-column UV-meter	1		
Pre-column conductivity meter	1		
Post-column conductivity	1		
System flow meter	1		
Air trap high level meter	1		
Air trap low level meter	1		
Pre-filter pressure meter	1		
Pre-column pressure meter	1		
Sample pump pressure meter	1		
PCV pressure meter, A inlets	1		
PCV pressure meter, B inlets	1		

First Estimation Material MECH

Sensors & Actuators	\$7.000
2 Columns	\$2.000
Stainless Material	\$4.000
	Sum
	\$13.000

Personal Ressources Needed MECH

Working Period	5 months
Engineer	5 MM
Specialized Worker	5 MM



Sum

5.4.2 Offer to LASeR in Oct 2014 (non-commercial investment budget 120 000 Mio. USD)



Bismillah

To

LASER Tripoli

Prof. Fawaz El Omar

Prof. Mustapha Jazzar

Investment Offer

Dear sirs,

as-Salamu alaikum

Samir Mourad and AECENAR offer LASER the following:

LASER becomes investment partner in the AECENAR pilot Hepatitis B vaccine production plant MEGBI-VPP. The contract could be as in our last project between LASeR and Samir Mourad. MEGBI-VPP has three parts:

1. A Genetic Engineering Lab with Safety Level 2. This is necessary to transfer Hepatitis B virus DNA into *S. cerevisiae*
2. Upstream Facility (Bioreactor): to grow up cells and express the target DNA (the target protein is the vaccine)
3. Downstream Facility (Automated Protein Purification Devices): to purify the vaccine from the *S. cerevisiae* cells

The total investment sum of MEGBI-VPP plant is \$ 120.180 (please refer to the attached calculation). According to this sum an investment partnership could be established. The actual not finished plant is installed in Ras Nhache/Batroun. The laboratory is complete, but there are debts (about 19.000 USD) concerning the lab. Parts of the bioreactor are also completed. The main open task is the Downstream Facility. According to the calculation there is still missing about \$57.000 to finish the plant. It is planned to finish the plant from November 2014 until April 2015.

If the plant is finished, there is a potential client in Saudi Arabia (Nadim Tamim Mourad). The plant could then produce vaccines in licence for international companies as Sanofi. So the product must only be chemically identical to the original and no own qualification procedure is needed which would cost millions of dollars.

Ras Nhache/Batroun, 29.10. 2014

A handwritten signature in blue ink, appearing to read "Samir Mourad", is written over a light blue horizontal line.

Samir Mourad (President AECENAR)

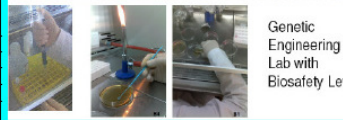
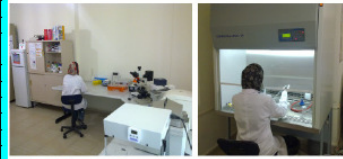
MEGBI Hepatitis Vaccine Pilot Plant (MEGBI-VPP)

MEGBI-VPP
DNA Vaccine Pilot Plant for production of Hepatitis B virus
2014

Last Update: 29 Oct 2014

DNA Transfer Laboratory

device	price
Safety Cabinet B2	\$8.000
centrifuge	\$5.000
Shake incubator	\$2.500
Thermocycler	\$2.500
Blood freezer	\$3.500
Gel rack with voltage	\$1.500
Precision Balance	\$800
Minus 80 °C freezer	\$10.000
UV Machine	\$1.100
vortex	\$300
precision pipettes	\$500
molecular biological reagents	\$4.000
chemicals	\$2.000
laboratory materials	\$1.500
laboratory tables	\$1.500
IT	\$1.000
fluorescence microscope	\$3.000

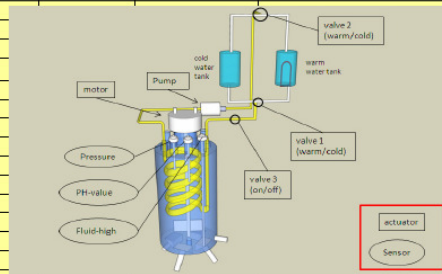


Genetic Engineering Lab with Biosafety Level 2

Total Laboratory \$48.700

Upstream Processing (Bioreactor)

Material Costs					Personnel Costs				
System	Piece	#	Piece price	Total	Task	duration (months)	Qualification	price / month	Total
Behälter (130l Stainless)		1	\$600	\$600	Integration Mechanics		1 Eng.		\$2.000
Temperiersystem	Behälter	2	\$50	\$100	Integration Automation System		1 Eng.		\$2.000
	Abdeckwolle	1	\$100	\$100	Programming Control		1 Eng.		\$2.000
	Blech	1	\$120	\$120	AECENAR Project Managing		3 Eng.		\$2.000
	Pumpe	1	\$80	\$80					
	Beheizungsrad	1	\$60	\$60					
Aut. Valve		2	\$200	\$400					
Temp.Sensor		1	\$20	\$20					
PH Sensor		1	\$100	\$100					
PO ₂ Sensor		1	\$1.200	\$1.200					
Ausfluß	Aut.Valve	1	\$200	\$200					
Medium Einfluß	Aut.Valve	1	\$200	\$200					
PH Regulierung	Behälter	1	\$50	\$50					
	Behälter	2	\$50	\$100					
Beimpfungsreinigung	Aut.Valve	2	\$200	\$400					
	Behälter	1	\$50	\$50					
Control System	Aut.Valve	1	\$200	\$200					
	Siemens S7 PLC	1	\$1.500	\$1.500					
	PC	1	\$500	\$500					
				Sum Material	\$5.980				
								Sum Personnel Costs	\$12.000
								Total Upstream Processing Unit (Bioreactor)	\$17.980



Downstream Processing

	Engineer need (MM)	Specialized Worker/Facharbeiter (MM)	Student (1/2 MM)	Personnel Costs	Material Costs	Duration (months)	Needed Staff		
ProE Model Purification Machine (as AKTA process)			1			1	1 Student (A2)		
ProE Model upstream downstream (-> presentation film)			0,5			0,5	1 Student (A2)		
Prototype Chromatogr. Process Device (mech)	5	5	5	\$15.000	\$13.000		1 Engineer (medical devices/biotech, automation) 1 Specialized Worker 1 Student (A2)		
Prototype Chromatogr. Process Device(autom)	3		3	\$6.000	\$2.500		1 Engineer (medical devices/biotech, automation) 1 Student (A2)		
Ultrafiltration Unit	1,5	1,5		\$4.500	\$2.500				
Ultracentrifuge (used)					\$4.000				
				Sum Personnel Costs	\$25.500	Sum Material	\$22.000		
								Total Downstream Processing Unit	\$47.500



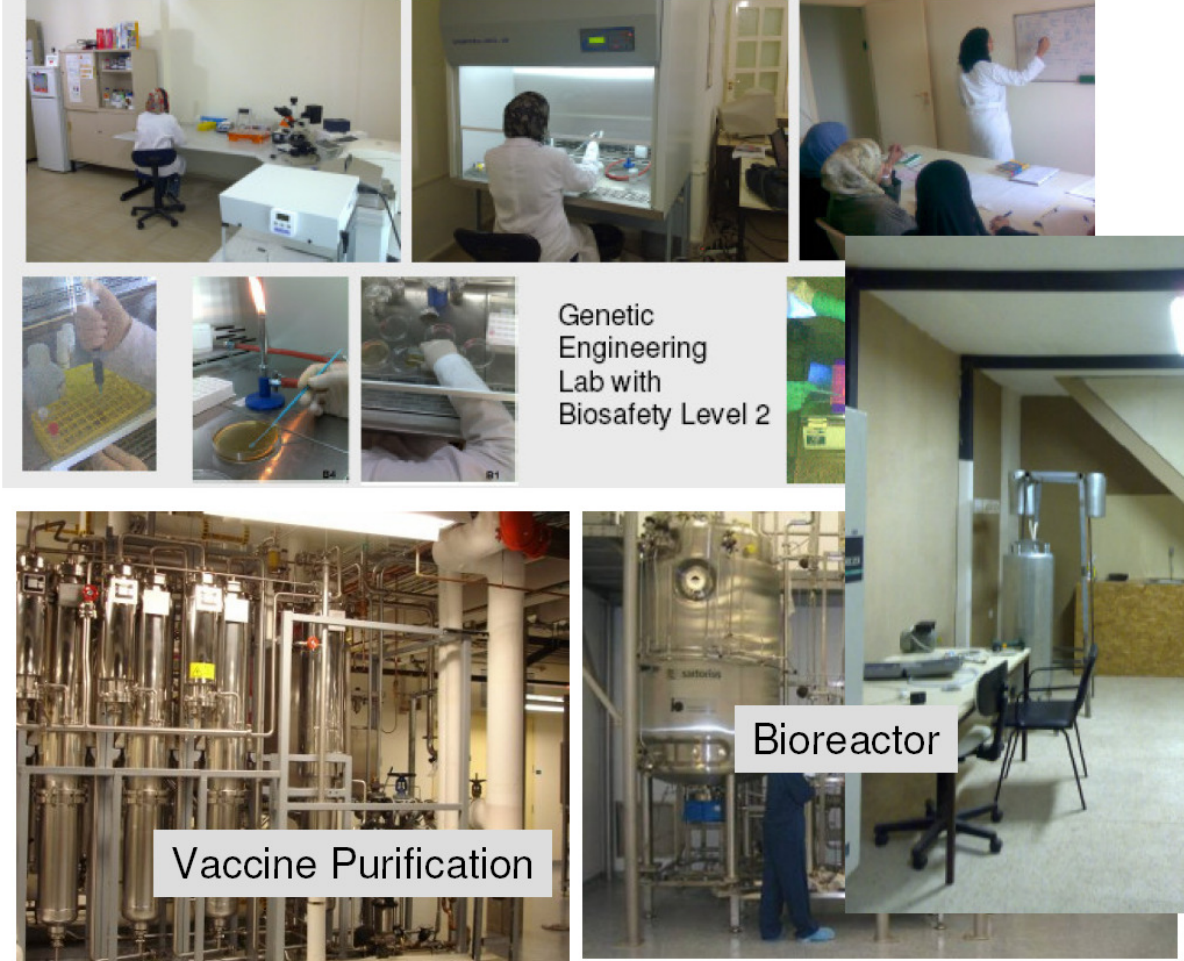
Project Management

Program Managing over 5 months	\$4.000							
Documentation	\$2.000							
				Total Project Management				\$6.000
Total MEGBI-VPP		\$120.180	planned project duration: Nov. 2014 - April 2015					

5.4.3 In Nov.14: Project Administration was given to TEMO Biotechnology - medium scale pilot plant (commercial investment budget 1.2 Mio. EUR)

MEGBI VPP

The DNA Vaccine Pilot Plant Project for the Future



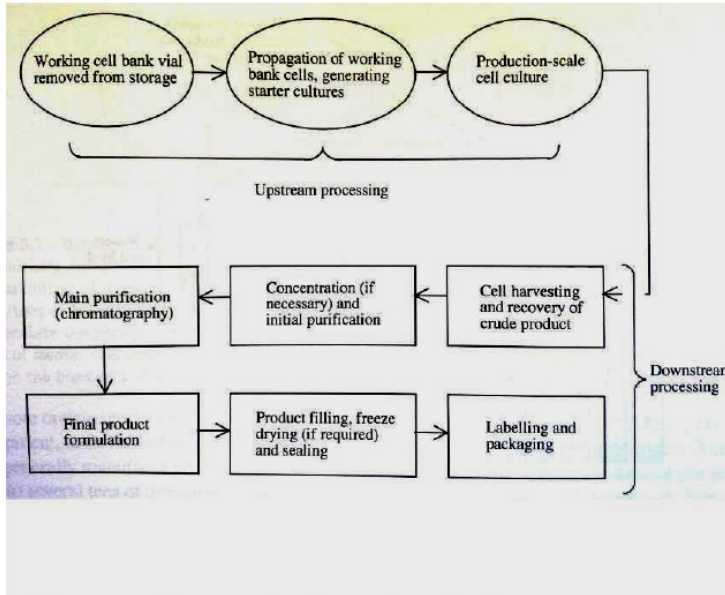
مشروع مخبر انتاج ألقحة عن طريق الحمض النووي

شارك في الاستثمار لتطور الامة

Investment for Future

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

The worldwide growth of disease creates an increasing demand for vaccination. On the other hand many new illnesses are discovered, which threaten the human health.



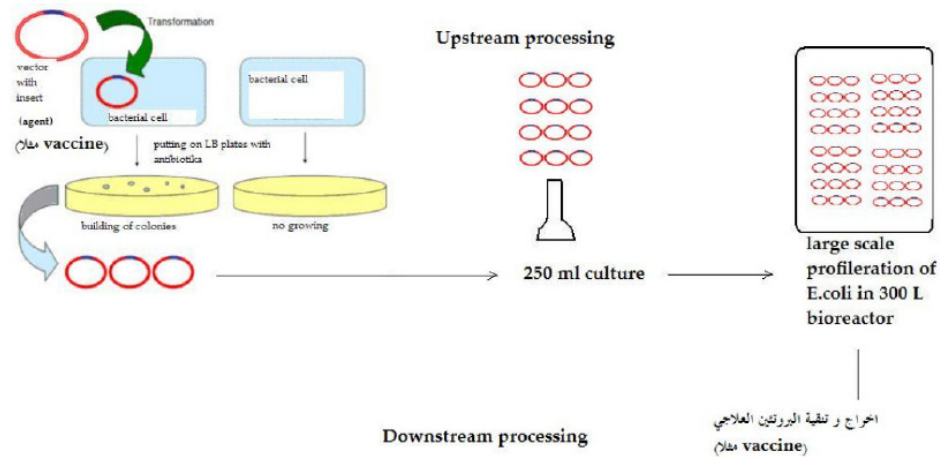
The modern biotechnology and genetic engineering technology offers DNA vaccination. Production plants for these vaccination method are easily adaptable for new diseases once the suitable DNA sequence for a new vaccine is known. So the production plant can e.g. today used for a vaccine against Hepatitis B and with little adaptation tomorrow for a vaccine against a new virus.

There are three main steps of production:

Step 1: Transferring of vaccine DNA sequence to the organism with multiplies and expresses the DNA (e.g. E.coli or S.cerevisae) (a **Genetic engineering lab** is required with at least Safety Level 2)

Step 2: Multiplying the organism with the foreign DNA in it in a **bioreactor**

Step 3: **Purification of the vaccine** out of the organism with was multiplied in Step 2



Cooperation between Europe and the Middle East

By the cooperation with Turkish and Arab partners the MEGBI-VPP project creates working possibilities for the young educated people in the Middle East region and helps to stabilize the region.

And with the help of God, the Almighty, this will be a big effort for a better and peaceful future for the two neighbour regions Europe and North-Africa/Middle East.

The genetic engineering laboratory of the pilot plant (for step 1) is based in North Lebanon at the nice village Ras Nhache. There were also undergone the prestudies of the project.

Bioreactor (step 2) and purification (step 3) will be implemented at TEMO Biotechnology site at Heidelberg, Germany

The administration of the project will be done by TEMO Biotechnology in Germany.



TEMO Biotechnology

TEMO e.K.
Im Klingenbühl 2a
69123 Heidelberg, Germany

Email: info@temo-ek.de
Website: www.temo-ek.de

مرکز البحوث الشرق الأوسط للبحوث والتقنية البيولوجية
وأسماعين - قضاء النبرون - لبنان

**Middle East Genetics and Biotechnology
Institute (MEGBI)**
Main Road, Ras Nhache, Batroun, Lebanon,
www.aecenar.com/institutes/megbi
Email: info@aecenar.com

Genetic
Engineering
Lab with
Biosafety Level 2

Smaller Scale	Prices 2014	Prices 2015 including transport and douane in Lebanon
Bioreactor (offer from 2013)	130.000 €	175.760 €
Uniflux (Filtration) 10	172.000 €	232.544 €
Aktaready	140.000 €	189.280 €
Ultracentrifuge	50.000 €	67.600 €
DNA Laboratory		130.000 €
Total		795.184 €

Medium Scale	Prices 2014	Prices 2015 including transport and douane in Lebanon
Bioreactor Xcell	240.000 €	324.480 €
Uniflux (Filtration) 30	305.000 €	412.360 €
AktaProcess	170.000 €	229.840 €
Ultracentrifuge	50.000 €	67.600 €
DNA Laboratory		130.000 €
Total		1.164.280 €



Fig. 1. Uniflux 30 system configured for cassette filters and holder.



Xcellerex™ XDR cell culture bioreactor system: 240 000 EUR

XDR-200 Bioreactor 180 390 Euro
Fully configures: + 24 200 Euro
Installation/ Qualification Bioreactor 34 750 Euro

UNIFLUX 30: 161 200 Euro
Filtration Tank (Basic 250 L) 108 000 Euro
UNIFLUX 10 (including 10 L tank) 135 800 Euro
Installation/ Qualification Filtration 34 750 Euro

DF Uniflux: 305 000 EUR



Akta ready: 150 000 EUR



AKTaready System 103 310 Euro
AKTAProcess max 180 or 400 l/h: 131 200 Euro
Gradient option (~Ready/~ Process: + 22.000 Euro
Installation/ Qualification Chromatography: 20.300 Euro

MEGBI-VPP
Akta based Draft Design
(Prices 2014, +4% for 2015)

USP

DSF

Businessplan

Invest + Return of Invest

2015	2016	2017	2018	2019	2020
MEGBI-VPP Germany/ Lebanon	Building of a DNA vaccine production plant at a scale of about 15 Mio. EUR Kuwait		Building of a DNA vaccine production plant at a scale of about 50 Mio. EUR Turkey or an Arab country		

Investment
1.2 Mio. €

0.144 Mio. €

0.576 Mio. €

0.6 Mio. €

0.84 Mio. €

0.48 Mio. €

2.64 Mio. € insha Allah
Prognosted Output
(220% in 5 years)

02.12.2014

TEMO Soft-, Hardware & Consulting e.K.

Inh.: Dipl.-Ing. Dipl.-Inf. Samir Mourad

Im Klängenbühl 2a, D-69123 Heidelberg

<http://www.temo-ek.de>

email: info@temo-ek.de

Handelsregistereintragung: HRA 104902, Handelreg. A, Amtsgericht Mannheim

St.nr. 32304/47983, Finanzamt Heidelberg



Bismillah

Contractor: 1. TEMO e.K.
2. Nasser Ali Al Araimi, Oman
ناصر بن علي بن ثابت العريمي
طالب الدكتوراه بجامعة بورتو بجمهورية البرتغال
0096899844497
00351917042568
nsralaraimi@gmail.com
nsralaraimi@cibio.up.pt
(referred to below as investor)

Contract of Participation of Nasser Ali Al Araimi on MEGBI VPP (Vaccine Pilot Plant)

§ 1 Project and Framework for the project

The project MEGBI VPP has the following contents:

Create a Vaccine Pilot Plant (planned 1-9 / 2015). Then customers will be won to build similar systems of TEMO Biotechnology leave (planned 2016-2020). This should be the profit (return on investment).

§ 2 Investment conditions

You can purchase the corresponding share of profits from an investment amount of 120 EUR.

It has MEGBI VPP a total value of EUR 1.2 million. That when, for example, 1200 EUR invested, you get 0.1% profit share. The profit shares to be distributed annually at the end of each year to participating investors (from end 2016 to end of 2020). Under the current plan is the profit of 2016-2020 a total of 2.64 million EUR, i.e. 220% of the investment. This profit is to be distributed to all shareholders.

§ 3 Capital redemption rights for the investor

The investor has the right to make with a 4-month notice until September 2015 to cancel the investment contract. Then he the total invest amount will be returned to him.

§ 4 Amount of investment and profit shares

Naser Al-Araimi invests 1200 EUR. In return, he receives 0,1 % of the profit. For details, see §2.

Date: 4.12.2014

Samir Mourad
(CEO TEMO e.K.)

Nasser Ali Al Araimi

Banking account:

TEMO e.K., IBAN DE46672500200009214763 , SWIFT-BIC SOLADES1HDB,
Bank: Sparkasse Heidelberg, Germany

Übersicht der Investoren am MEGBI-VPP

Stand: 31.12.2014

Investoren

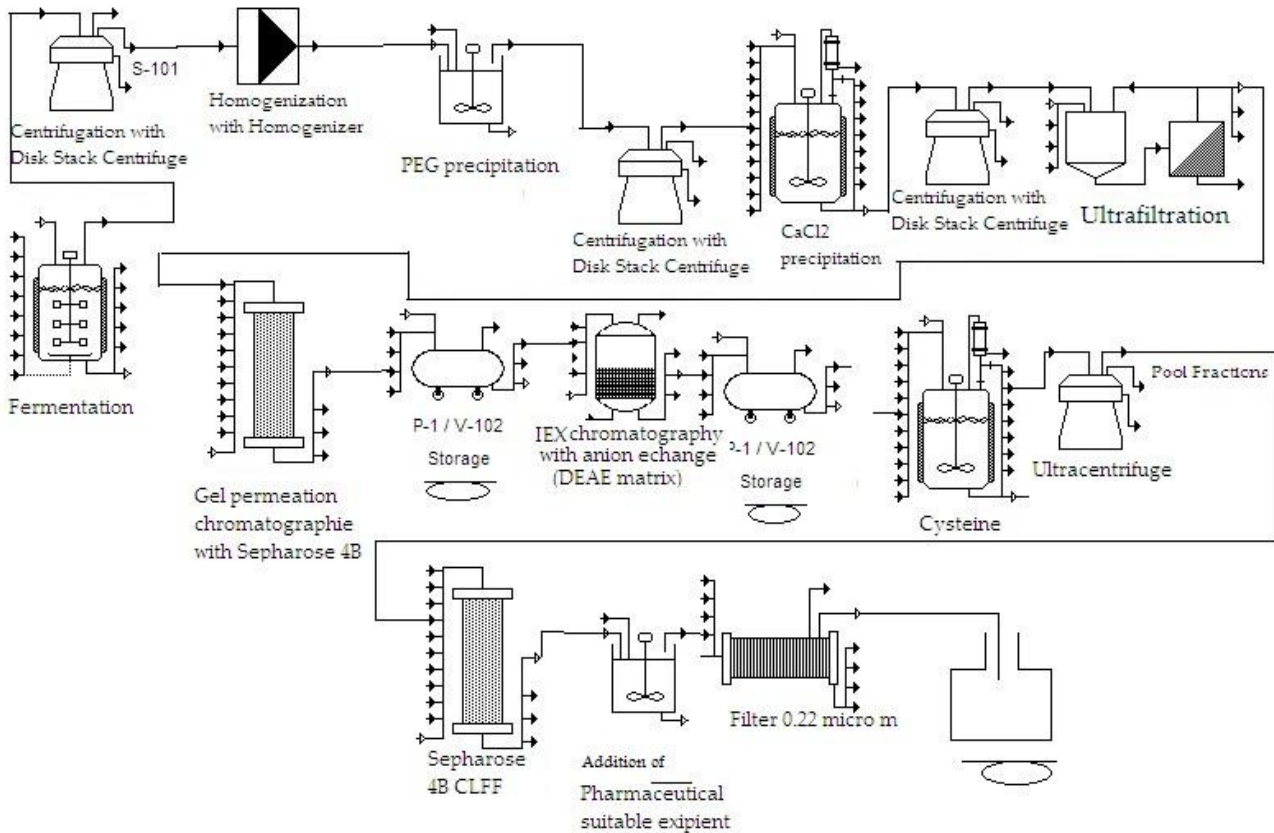
Gesamtentwicklungswert 1.200.000 €

Investor	Höhe des Investitionswertes	Anteile am Gewinn (Entwicklung) bis April 2011	Bemerkung/Datum der Investition
Amine Bouafif	100,25 €	0,0083542%	Investition bezahlt (Überweisung ca. 11.12.14)
Nasser Al Arami	1.200 €	0,1000000%	Investition bezahlt (Überweisung 27.12.14)
David Yildiz	600 €	0,0500000%	Investition bezahlt (bar ca. 8.12.14)
AECENAR	133.000 €	11,0833333%	DNA Labor 130TEUR, Miete Jan-Jun 15 3TEUR
Summe:	134.900 €	11,2416875%	
Restentwicklungsanteile TEMO	1.065.100 €	88,76%	


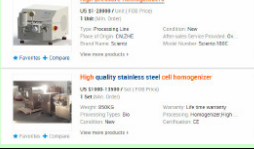
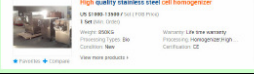




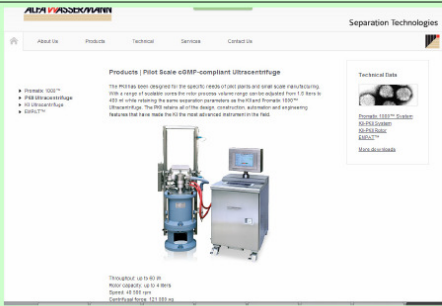
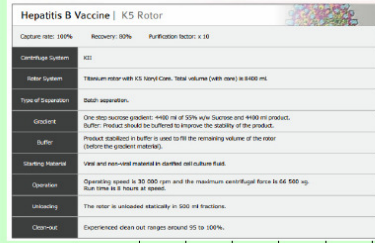
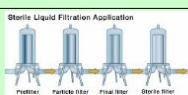
derzeit ist der größte Teil der Projektdokumente öffentlich zugänglich und hier einsehbar:

<http://temo-ek.de/8.html>

5.4.4 Design of HBV production pilot plant (Dez. 14 / Jan 15)



5.4.5 Calculation of Downstream Process (DSP) of Design of Dez. 14 / Jan 15

Device No.	Device Name	Price including transport & customs	Specification	Supplier/Image																
1	Disc Stack Centrifuge 1	\$25,000																		
2	Homogenizer Storage Tank PCO Precipitation mixing tank 100L	\$10,000 \$2,000		 																
4	Disc Stack Centrifuge 2 Storage Tank COC2 Precipitation mixing tank 100L	\$25,000 \$2,000																		
6	Ultrafiltration Device Storage Tank 100L for UF	\$500 \$2,000			4000L hollow fiber ultrafiltration water treatment machine FOB Price: US \$4000 - 6000 /UNIT Get Latest Price Min. Order Quantity: 1 UNIT/UNITS Supply Ability: 20 UNIT/UNITS per Month Port: Guangzhou/Shenzhen Payment Terms: L/C,T/T Contact Supplier Leave Messages															
6	20 L Chromatography column	\$3,000																		
9	100 L Sephadex 4B Storage Tank	\$18,000																		
10	100L	\$2,000																		
11	20 L Chromatography column	\$3,000																		
10	10 L DEAE matrix DEAE Sepharose® Fast Flow 100L (Sigma Aldrich) Storage Tank	\$17,000 \$2,000																		
14	Ultrafiltration Cell 1000 L Chromatography column	\$150,000 \$3,000																		
16	100 L Sephadex 4BCLFF Storage Tank	\$18,000 \$2,000																		
18	Ultrafiltration 0.22 Micrometer	\$500																		
19	Chemicals	\$2000																		
20	Engineering @ 3 man months	\$40000																		
21	Project Management @ 3 man months	\$40000																		
Total		\$332,000																		

5.5 TEMO-STPP/IPP 2014

5.5.1 Project Status Jan 2014



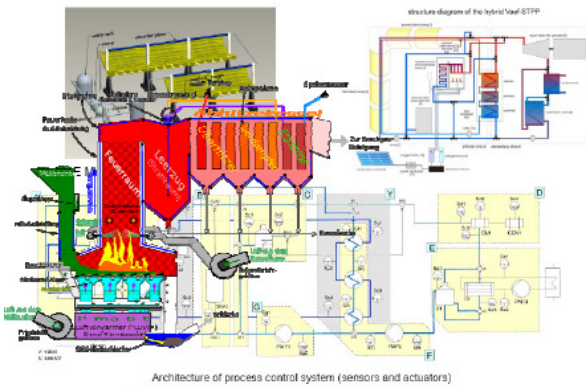
مركز للطاقة البديلة
<http://aecenar.com/institutes/meae>

Lebanese Association
 for Scientific Research
 (LAsER), Tripoli
www.laser-lb.org

Incineration Power Plant Technology TEMO-STPP Test Plant

توليد كهرباء – حل لمشكلة النفايات و الاستفادة منها

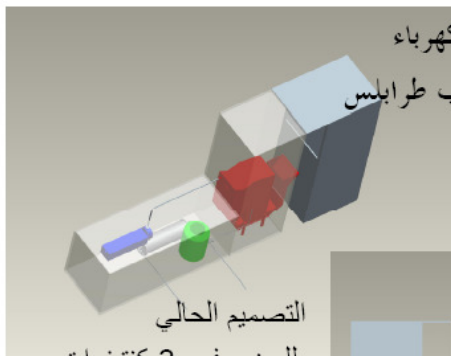
Last update:
 20 January 2013



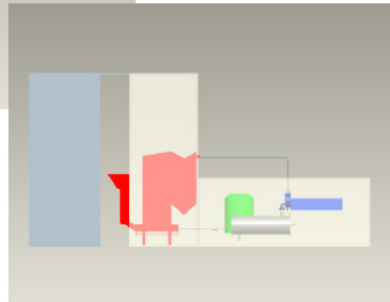
اعمال حالية:

- تشغيل المحرقة لتوليد البخار
- ربط التوربين لتوليد الكهرباء
- وضع الخطة في انفه قرب طرابلس

يقدم المشروع فرص
 للتوظيف لمهندسي
 الميكانيك والكهرباء



التصميم الحالي
 للوضع في 3 كنتينرات
 في شركة
 باسم العلي في انفه
 (قرب طرابلس في
 شمال لبنان)





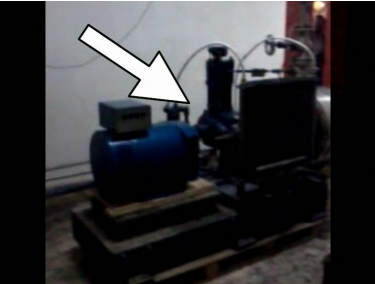
Contact:

Samir Mourad
 Tel. +961 76 341 526
samir.mourad@aecenar.com

Prof. Dr. Fawaz Elomar
 Tel. +961 3 355 329
fomar@ul.edu.lb

Prof. Dr. Moustapha Jazar
 Tel. +961 3 658 632
mjazar@laser-lb.org

5.5.2 Project Status May 2014: Successful test of turbine

Dec 13	May 14	
 	<p>Feed water tank</p> 	
	<p>Evaporator automatic level control</p> 	
	<p>condensor</p> 	<p>Integration of test rig</p>  <p>Successful test of turbine</p> <p>الحمد لله</p>

5.5.3 Project Status Nov 2014: المحطة ولدت كهرباء عن طريق حرق خشب

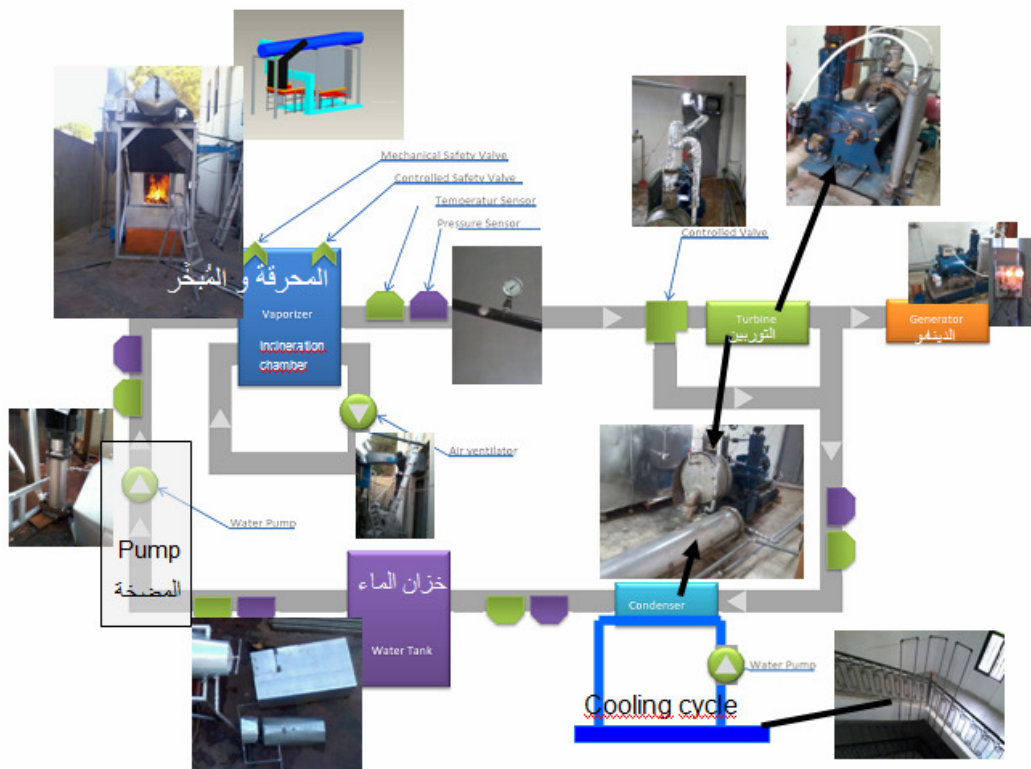
AECENAR
Association for Economical and Technological Cooperation
in the Euro-Asian and North-African Region

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TEMO-IPP (Incineration Power Plant) - Demonstration Plant

Hits: 1755

video clip of finished demonstration power plant at Ras Nhahe (Nov 2014)



رسالة الى المجلس البلدي في راسنحاش: Project Status Dec 2014: 5.5.4

بسم الله الرحمن الرحيم

حضرة رئيس البلدية السيد إيهاب قلاوون المحترم

حضرة أعضاء بلدية راسنحاش الكرام

تحية وبعد،

نحيطكم علماً بأنه وبحمد الله تعالى قد تم بنجاح تشغيل محطة الطاقة التي صممت خلف مسجد القبسي.

نقترح عليكم تشغيل المحطة على أرض تابعة للبلدية، فيتم عندها حرق النفايات وتوليد الطاقة لإنارة الطرقات بشكل دائم.

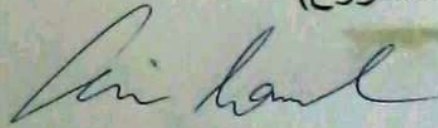
طاقة التوليد حالياً هي 130 أمبير يمكن ان تصل إلى 240 أمبير. التوليد يكون عن طريق توربين فهو بذلك لا يسبب ضجيجاً، وطبعاً يجب إستعمال الفلاتر لعدم تلويث البيئة.

سنجد بذلك حلاً جميلاً لمشكلة النفايات حيث تجمع من المنطقة كلها. كما يمكننا الإستفادة من الماء الساخن الناتج عن عملية التوليد، كما ونكون قد ساهمنا في خلق فرص عمل إضافية.

نحن على اتم الإستعداد للتعاون من اجل تقديم الأفضل لمجتمعنا.

(الرسالة مرفقة ب CD حول المشروع)

المهندس سمير مراد



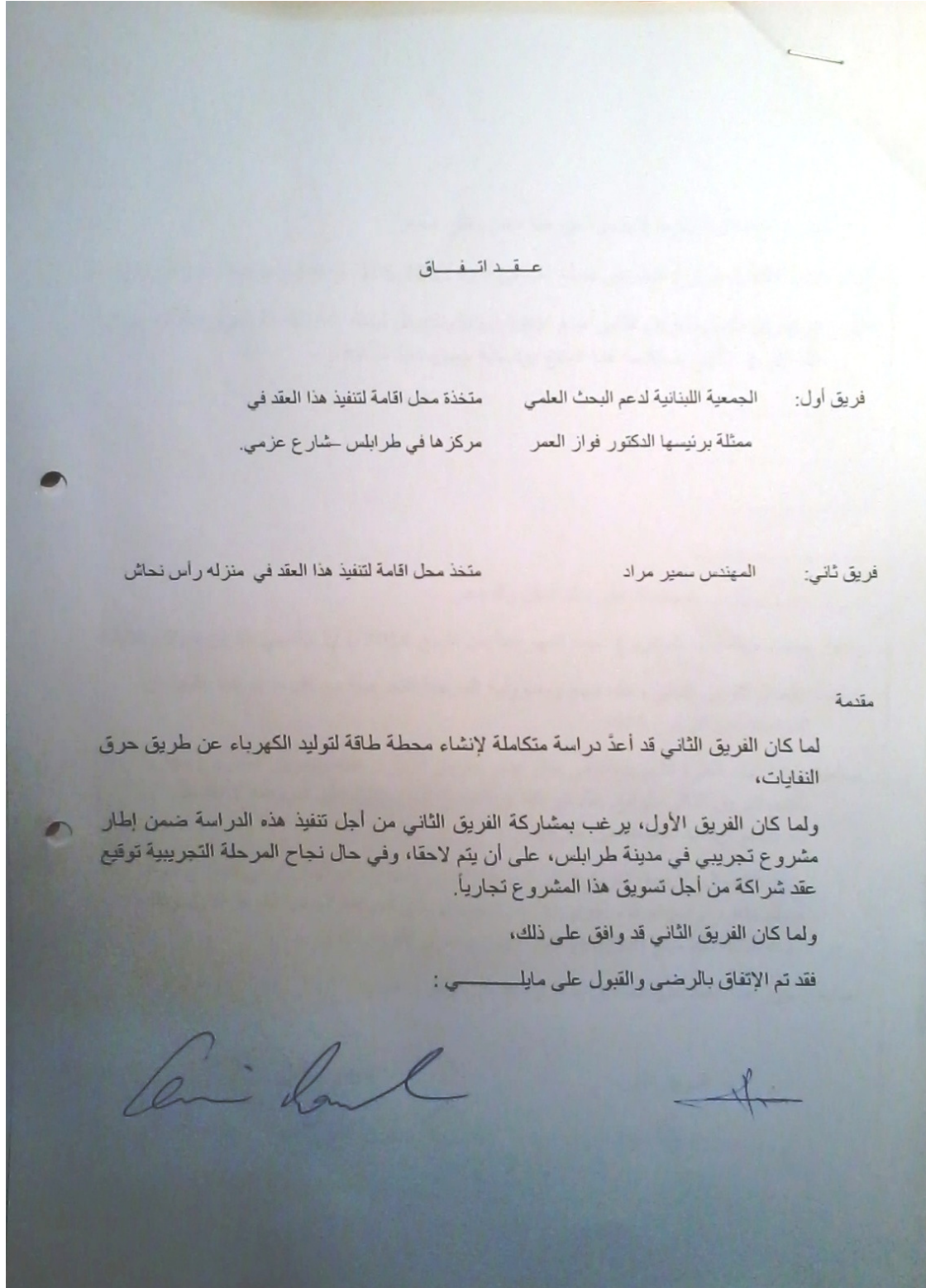
راسنحاش 23-12-2014

5.5.5 Project Planning and Control

Time Schedule / الجدول الزمني 5.6

Name	Start	Finish	2014			
			Jan	Apr	Jul	Okt
TEMO-IPP with LAsER	03.01.2014	19.11.2014				
establishing steady place for demo plant for incineration	03.01.2014	20.01.2014				
integration and working of experimental plant at Qubaisi lab	21.01.2014	23.05.2014				
Successful turbine test	12.05.2014	12.05.2014				
Demonstration Meeting with LAsER	23.05.2014	23.05.2014				
Construction and building of incineration based evaporator	13.05.2014	11.10.2014				
incineration integration to demo plant at Qubaisi center	03.10.2014	24.10.2014				
meeting with Liqa alkhair, film presentation	05.11.2014	05.11.2014				
final report (including photos of liqa)	13.11.2014	19.11.2014				

5.6.1 Contract between LASeR and Samir Mourad



أولاً: تعتبر هذه المقدمة جزءاً لا يتجزأ من هذا العقد وتقرأ معه.

ثانياً: حدّدت كلفة المشروع التجريبي بمبلغ إجمالي قدره / 105,380 \$ توزع مناصفة بين الفريقين.

ثالثاً: دفع الفريق الأول للفريق الثاني مبلغ / 52,690 \$ ما يمثل قيمة مشاركته بالمشروع التجريبي وقد أقر الفريق الثاني باستلامه هذا المبلغ بواسطة خمس شيكات أرقام

.....

.....

.....

.....

.....

رابعاً: حددت مهلة تنفيذ المشروع سبعة أشهر تبدأ من تاريخ 1/3/2014 وتنتهي بتاريخ 30/9/2014

خامساً: يتحمل الفريق الثاني وحده مهام ومسؤولية المرحلة التجريبية مع كل ما يترتب عليها من إلتزامات من أي نوع كانت.

سادساً: عند انتهاء الفترة التجريبية وفي حال أبدى الفريق الأول رغبته بتسويق المشروع تجارياً يلتزم الفريق الثاني بتوقيع عقد شراكة مع الفريق الأول يتفق على شروطه لاحقاً على أن يتم تقاسم أرباحه مناصفة بين الفريقين.

وبكل الأحوال، لا يحق للفريق الثاني تسويق المشروع تجارياً في لبنان أو في الخارج سواء بشكل منفرد أو مع شركاء آخرين إلا بعد الحصول على الموافقة الخطية للفريق الأول وذلك تحت طائلة دفع مبلغ \$ 50,000 كبديل عطل وضرر للفريق الأول.

سابعاً: حرر هذا العقد على نسختين أصليتين بيد كل فريق واحد .

الفريق الثاني

الفريق الأول



Left: S. Mourad, Dr. Fawaz El Omar



Right: Dr. Fawaz El Omar, Dr. Moustapha Jazar

Projects

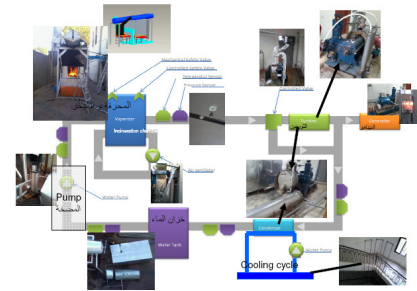
5.6.2 Total Costs

File path and name: D:\AECENAR\Administration\Planning\2014\111114AECENAR_Businessplan_Budget2014.xls
last update: 11.11.2014

TEMO STPP Incineration Demonstration Plant, total installation costs

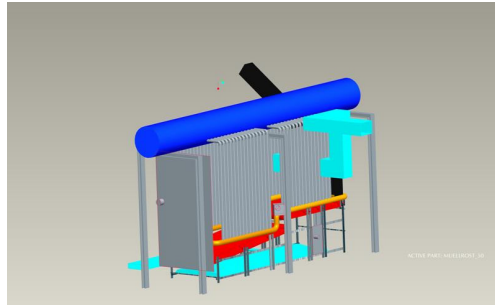
Material Costs (including workers for manufacturing)

Part	Number of pieces	Price/piece	Total	
Steam filter	1	\$200	\$200	
Condensor	1	\$3.000	\$3.000	
condensor cooling tubes (Stainless)	10m 1 inch	\$900	\$900	
Test Vaporizer	1	\$3.500	\$3.500	
Test Vap. Pressure tube Stainless Generator	1	\$1.500	\$1.500	
diesel burner including fuel feed	1	\$650	\$650	
safety valve 15 bar	1	\$500	\$500	
	0	\$1.000	\$0	
pressure sensors	5	\$60	\$300	Originally Estimated Costs from Originally Contract with LASER
fresh water tank (stainless)	1	\$900	\$900	\$75.380
incineration burning chamber (including transportation band)&vaporizer (climbing tubes...)	1	\$14.358	\$14.358	Extra Budget \$29.978
fume purification (incl. filter for CO, SO2, NH3)	1	\$2.500	\$2.500	Costs All in all
				\$105.358
Turbine 40KW	1	\$19.300	\$19.300	LASER payed 50% of costs
Total Material			\$51.858	



Engineering Staff Costs				
Task	MM	Qualifikation	Salary/MM	Total Salary
Integration with Test Vaporizer	4	Eng.	\$2.000	\$8.000
Integration with Incineration Vap.	2	Eng.	\$2.000	\$4.000
Integration Turbine Electrics	0,5	Eng.	\$2.000	\$1.000
Integration Process Control system	0,5	Eng.	\$2.000	\$1.000
Control System (Software&Hardware Development)	4	Eng.	\$2.000	\$8.000
AECENAR Project Management	9	Eng.	\$3.500	\$31.500
Total Man Power Costs				\$53.500

5.6.3 المحرقة و المبخر



1 kilocalorie =
4184 joules

heat transfer over pipes
24000 kcal/m²
100416 kJ/m²

Oil Burner - Incineration combination evaporator

Alternative 3 (with reduced volume)

Last update: 11.11.2014

	Dichte Stahl [kg/m ³]	d [m]	Stärke [mm]	length [m]	Volumen d. Stahls [m ³]	m [kg]/tube	Price/kg	Price / tube	Price of all tubes
pressure tubes	7850	0,61	16,45	6	0,189140291	1485	\$1,00	\$1.485	\$1.485
caps for tubes	7850		10	0,6	0,0036	28	\$1,00	\$125	\$200
			# of caps	# of tubes	Volume of tube				
steel A106 Grade B seamless			2	1	1659			Soll: 1,75 t steam	

Needed Stainless plates (for tube covers)
0,25

burning chamber&vap. Inner Mantelung length [m]	width [m]	height [m]	Needed steel plates for rest covering (1x2 m ²)	Stärke [mm]	Mass [kg]	Price/kg	Price of all plates
5	1,2	2,4	14,88	2,5	584,04	\$1,30	\$759

Flossenwand	price	
seamless climbing tubes		
# of 6 m long tubes	22 \$52,00	\$1.162
# curves 2 inch	60 \$2,25	\$135
Flossen (250x6x0,3)	60 \$3,70	\$222
134,06 meter bei 2 incl 4524 kcal		

Rohre müssen zu 2/3 Kontakt mit heisser Brennkammer haben

incineration roll chain materia	\$1.000	bereits bez.
chain work	\$220	bereits bez.
gear plus mot	\$200	bereits bez.

8,50 USD pro Meter	Sammelrohr (4 inch)	2 \$125,00	\$250
	# curves 4 inch	9 \$12,50	\$113

instrumentation	Rauchgasreinigung	incineration and evaporat or work	Material (welding rods, cutting)
pressure control 2 McDonald	chemin elements (0,3mx1m) 32USD	24.-27.6. 10.-23.6. 1.8-31.8. 1.9.-15.10	
level indicator: 4 electrodes stainless	Filters	# of workii price per c \$55	
Pump 16 bar, 1 t/h		4 \$55 14 \$55 28 \$55 40 \$55	
ite-glass PN-25 4000-USD		\$220 \$770 \$1.540 \$2.200	500
pressure-reducing valve direct (400-USD)	Total Rauchgasreinigung		
	\$584		
			Total \$14.358

isolation and outer matelung	\$446
extra wider water tank	\$200
and extra condensor cooling pip	\$300
turbine-generator adaption	\$200

Still open at 02.09.2014 \$4.093

5.7.2 Status of project in Dec 2013

Satellite System for Radio Astronomy IAP_SRWDA-SAT

Last update: 17 December 2013

Electric Propulsion for orbit and attitude stabilization

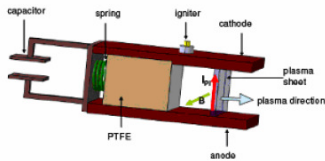
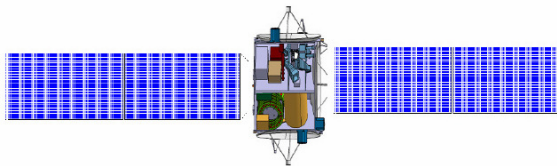
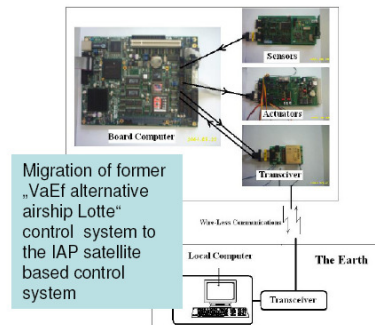


Figure 1. Working Principle of an I-MPD

First Mockup Model



Detection of HI Lines in Interstellar Media



Actual Working Packages:

- Refinement of the first Mockup Model
- Development of Prototype with parts of IAP ECS and alternative Lotte FCS
- Mission Simulation
- Simple Prototype for the MPD Propulsion Device

Financial and man power needs for 2014:

- 2-3 persons (e.g. as master thesises)
- 4.500 USD material

Contact

Samir Mourad
Mobile Lebanon ++961 76 341 526
Mobile Germany ++49 (0)176 4039 2038
Email: samir.mourad@aecenar.com

5.7.3 Status of project May 2014



Figure 25 Mock up model

5.7.4 Main goals achieved:

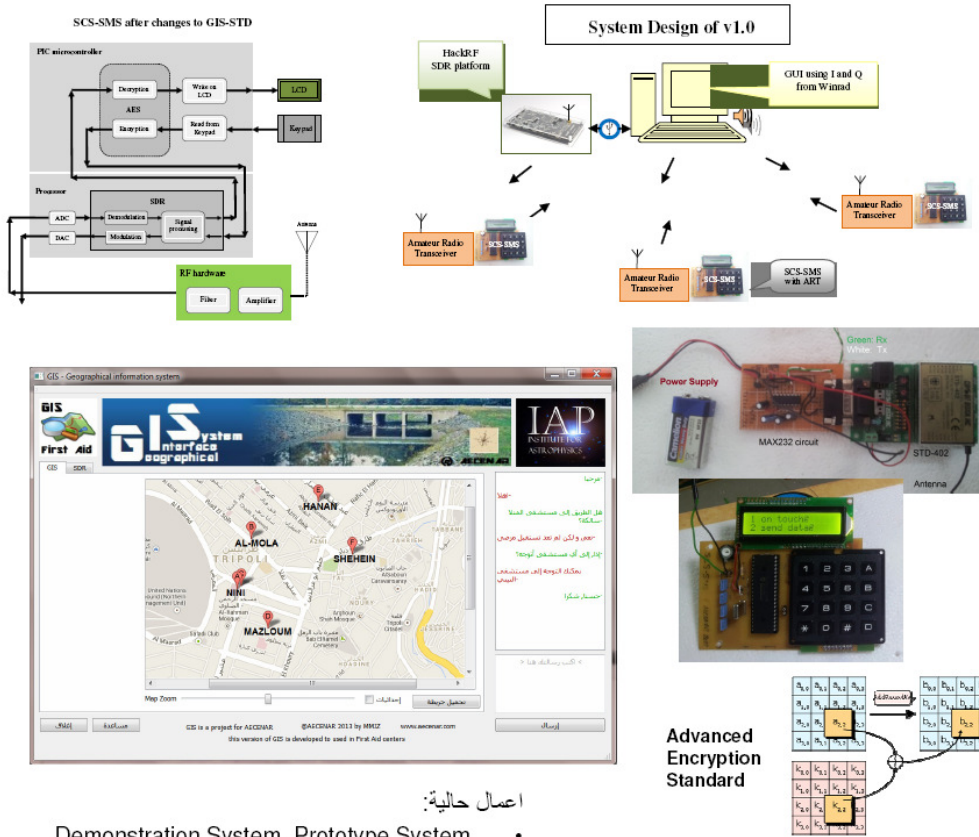
- Specification of SAT clear: scientific surveillance as Dubai-SAT & radio astronomy SAT
- Radio astronomy sensor
- Communication system partly developed (Software designed radio in IAP_SRWDA)

5.7.5 ECS for IAP Sat

Emergency Communication System

شبكة اتصالات آمنة للطوارئ و الاسعافات

Last update: 17 January 2014



اعمال حالية:

- Demonstration System, Prototype System

الحاجيات لعام 2014:

- 2 اشخاص
- \$5.000 للمواد

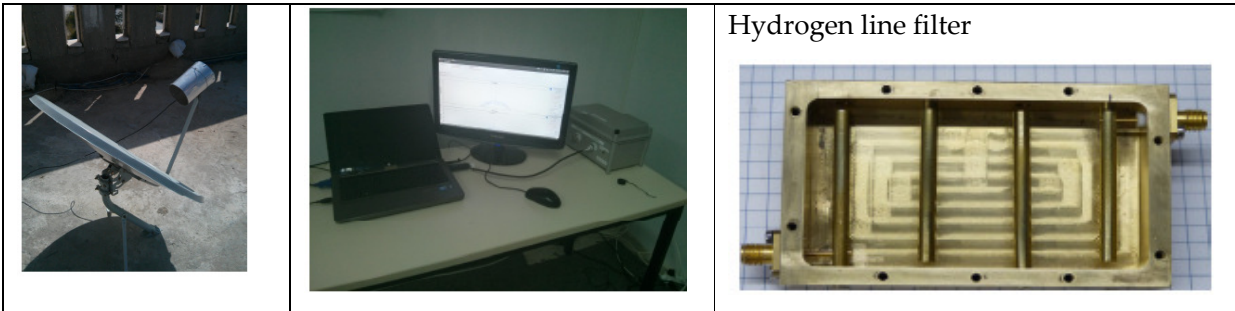
Decision: IAP_ECS to merged with IAP_SAT

5.8 IAP_SRWDA (Ground Station for Radio Astronomy)

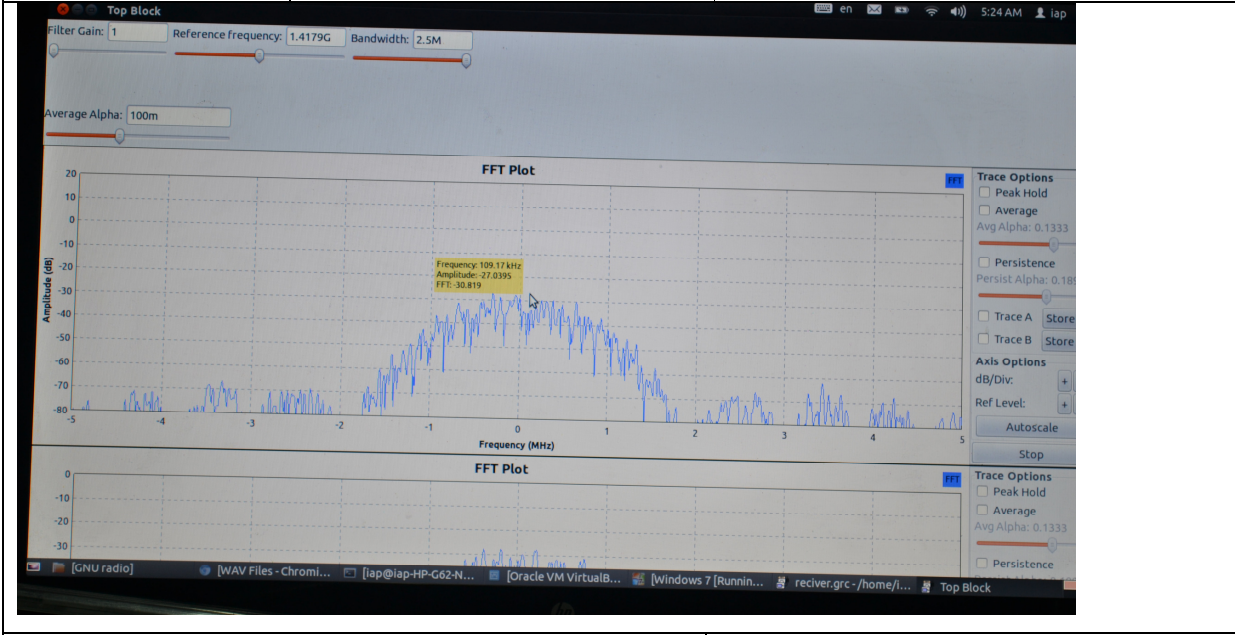
5.8.1 Project Costs 2014


Personnel	Material	Total
	Master Thesis of Suhaib Kassar	500\$

5.8.2 Master Thesis of Suhaib Kassar




Hydrogen line filter






KIT
Karlsruhe Institute of Technology




ITIV
Institut für Technik der Informationsverarbeitung

Head of Institute
Prof. Dr.-Ing. K. D. Müller-Glaser
Prof. Dr.-Ing. Dr. h.c. J. Becker
Prof. Dr. rer. nat. Wilhelm Stork

in cooperation with



IAP
INSTITUTE FOR
ASTROPHYSICS



AECENAR
Association for Economical and Technological Cooperation
in the Euro-Arab and North-African Region

Prototype for a base station for supernova remnant HI line radio wave detector and analyzer (SRWDA)

Master Thesis

by

Suhaib Kassar

Karlsruhe, 6th of April 2014

Supervisor: M.Sc. M.Eng. Samir Mourad, IAP (AECENAR)
Main Referee: Prof. Dr. rer. nat. Wilhelm Stork, ITIV (KIT)

5.8.3 Facit

Project Goal was achieved. Decision: Project to be merged with IAP-SAT.



For future: if a student comes from out of Lebanon, then an appropriate housing has to be managed before he comes.

Appendix: Contact data of specialists (معلم), workers, ...

Specialist for / price	Name	Address	Phone
Aluminium, 80\$/qm	عمر	بعيدة - عكار	70 140828
Electricity 25 USD/day	Abdullah (from Syria), brother of Ibrahim (Mustafa knows him)		
Sanitary 25 USD/day	Abdullah (from Syria), brother of Ibrahim (Mustafa knows him)		
Painting 25 USD/day	Abdullah and Ibrahim (from Syria) (Mustafa knows them)		
Bilat	Mustafa (from Halab)	Ras Nhache	76 493901
Eisenschweißer	Muhammad Qammah	Mina	70 339875
Stainlessschweißer	Bilal Naouchi	bilalnaoushi@hotmail.com	03 446027
Wärme u. Kälte technik u.s.w.	Khidr Balita	Mina	03 232088