HIPERDIAS

2nd Consortium Meeting

13th September 2016 , BOSCH Research Campus in Renningen, Stuttgart

ATTENDEES	
Organisation:	**Name :**
Universitaet of Stuttgart	Marwan Abdou-Ahmed Volkner Onuseit Jan Philipp Negel Christian Freitag
Robert Bosch GMBH	Andreas Mickalowski Stephanie Karg Martin Lustfield Mawuli Ametowobla
Element Six Limited	William Scalbert Andrew Whitehead
Amplitude Systemes SSA	Clemens Hoenninger Mark Drechsler
Universite De Limoges	Frederic Gerome
Gesellschaft Fur Angewandte Mikro und Optoelekttronik Mit Beschrankterhaftung AMO GMBH	Michael Moller Thorsten Walbrink
Glophotonics	Jerome Alibert
Class 4 Laser Professionals AG (C4L)	Noemie Drury
Laser Engineering Applications SA	David Bruneel Jose Antonio Ramos de Campos
Kite Innovation Europe Limited	James Clayton Julie Devall

Goldehard Schmitz representing BOSCH opened the Consortium Meeting and welcomed partners to the BOSCH site

2. Partner Presentations

- AMP - Clemens Hoenninger
- AMO – Michael Moller
- C4L Noemie Drury
- E6 - William Scalbert
- LASEA - David Bruneel
- BOSCH – Martin Lustfield
- GLO – Jerome Alibert
- KITE – James Clayton (Dissemination)
- KITE – Julie Devall (Management, including Finances)

3. Science and Technical Board Meeting (STB)

A. Components:

1. Gratings

- AMO has bought 30 substrates, expects >50% yield in grating fabrication (info AMO)
- small circular substrates ready within 6weeks, larger rectangular substrates ready for end of the year (12/2016) (info AMO)

- diffraction efficiency tests (mainly at IFSW on round substrates)
- study potential beam profil deformation effects in compressors (AMP & IFSW, as soon as rectangular gratings are available)
- damage threshold tests (IFSW & AMP, maybe not on all substrates. :-))

2. PMC V0:

- module is essentially available for tests in Hiperdias (conditions to be seen with GLO)
- no tests with 500-W-laser within the next 6 months. But tests with 50-W-Satsuma possible that is delivered to IFSW. Or tests at Amplitude with up to 50-W lasers (resource needed to use the device in Oct/Nov). (IFSW and AMP to clarify together with GLO)
- GLO raises question on insurance of equipement? (Kite to clarify this point).

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B. Systems:

1. beam stabilization for demonstrators? LASEA
2. further system integration? LASEA & Bosch
3. Laser related topics for processing (control interface, synchronisation options, burst,...) AMP/IFSW & Bosch & C4L & LASEA
4. 500-W laser control: ideally integrated into AMP user control platform: IFSW & AMP

4. Technology and Transfer Panel (TTP)

1. A discussion took place around IP in the project.
2. It was agreed that there were no pending major issues regarding IP
3. Andrew Whitehead to send over to the Consortium a document that will provide clarity on any future IP issues
4. Jerome Alibert raised the issue of technological material transfer (in regards to materials, parts and any other instruments being transferred between sites). He stated that an agreement need to be put in place in regards to technology being moved between sites. This would include issues around damage and storage procedures etc.

5. Management Meeting

1. The issue around teleconference procedure was raised. This is because BOSCH cannot access Skype for Business when controlled by Kite. The solution for this is for BOSCH to send out the invite
2. The next Consortium Meeting will be in Germany hosted by AMO. The Consortium agreed that this should take place in March 2016. JD and AMO to work together in getting the next consortium booked in.

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1. Hiperdias Deliverables (in order of month due)

Next 6 months

Due Month	DoA Month	Date	Contingency / Due Date	Deliverable	Deliverable Title	WP No	Lead Beneficiary	Type	Dissemination Level
1	Feb-16	29-02-16	19-02-16	D9.1	Project management handbook	WP9	KITE	Report	Confidential
3	Apr-16	30-04-16	20-04-16	D8.1	Project website established	WP8	KITE	Websites, patents filing etc.	Public
3	Apr-16	30-04-16	20-04-16	D8.2	Communication kit	WP8	KITE	Report	Public
4	May-16	31-05-16	21-05-16	D1.1	End-user application specifications	WP1	BOSCH	Report	Confidential
4	May-16	31-05-16	21-05-16	D4.1	Report on simulation of pulse compression gratings with diffraction efficiency >=99% over large spectral bandwidth (5-10 nm) around 1030 nm	WP4	USTUTT	Report	Confidential
4	May-16	31-05-16	21-05-16	D8.3	Video presentation of the Hiperdias project	WP8	KITE	Report	Public
6	Jul-16	31-07-16	21-07-16	D5.1	Design of the multi-pass amplifier	WP5	USTUTT	Report	Public
9	Oct-16	31-10-16	21-10-16	D3.1	50-W, 300-fs,>1-MHz laser for seeding an Yb:YAG amplier (1)	WP3	AMP	Demonstrator	Confidential
9	Oct-16	31-10-16	21-10-16	D3.2	50-W, 300-fs,>1-MHz laser for seeding an Yb:YAG amplier (2)	WP3	AMP	Report	Public
12	Jan-17	31-01-17	21-01-17	D1.2	Process and system specifications	WP1	E6	Report	Public
12	Jan-17	31-01-17	21-01-17	D1.3	Prototypes and progress validation	WP1	BOSCH	Report	Confidential
12	Jan-17	31-01-17	21-01-17	D1.4	Definition of software-technical Interface	WP1	LASEA	Report	Confidential
12	Jan-17	31-01-17	21-01-17	D4.2	Report on first fabrication of pulse compression grating with 98% diffraction efficiency on large area, rectangular substrate material	WP4	AMO	Report	Confidential
12	Jan-17	31-01-17	21-01-17	D6.1	Definition of interfaces	WP6	LASEA	Report	Confidential
12	Jan-17	31-01-17	21-01-17	D8.4	Draft exploitation and dissemination plan	WP8	KITE	Report	Confidential
12	Jan-17	31-01-17	21-01-17	D9.2	1st Periodic Report	WP9	USTUTT	Report	Confidential
15	Apr-17	30-04-17	20-04-17	D6.2	Definition of optics constraints	WP6	USTUTT	Report	Confidential
17	Jun-17	30-06-17	20-06-17	D6.3	System layout	WP6	C4L	Report	Confidential
18	Jul-17	31-07-17	21-07-17	D4.3	Report on fabrication and optical characterization of optimized gratings with single-pass diffraction efficiency >-99% over large spectral bandwidth (5-10nm) around 1030 nm	WP4	AMO	Report	Confidential
21	Oct-17	31-10-17	21-10-17	D3.3	200-W, 500-fs>1-MHz laser (1)	WP3	AMP	Demonstrator	Confidential
21	Oct-17	31-10-17	21-10-17	D3.4	200-W, 500-fs>1-MHz laser (2)	WP3	AMP	Report	Public
22	Nov-17	30-11-17	20-11-17	D5.2	Thin-disk multi-pass amplifier with 500W, 1MHz, sub-500fs (1)	WP5	USTUTT	Report	Confidential
22	Nov-17	30-11-17	20-11-17	D5.3	Thin-disk multi-pass amplifier with 500W, 1MHz, sub-500fs (2)	WP5	USTUTT	Report	Public

24	Jan-18	31-01-18	21-01-18	D2.1	Process limits 3D Si processing	WP2	BOSCH	Report	Confidential
24	Jan-18	31-01-18	21-01-18	D2.2	Process limits fine cutting of metal	WP2	C4L	Report	Public
24	Jan-18	31-01-18	21-01-18	D2.3	Process limits diamond processing	WP2	C4L	Report	Public
24	Jan-18	31-01-18	21-01-18	D4.4	Final version of PMC module for fibre beam delivery (1)	WP4	GLO	Other	Public
24	Jan-18	31-01-18	21-01-18	D4.5	HC-PCF with improved PER 1um (>20 dB)	WP4	XLIM	Other	Public
24	Jan-18	31-01-18	21-01-18	D6.4	Integration of laser and optics	WP6	C4L	Other	Confidential
24	Jan-18	31-01-18	21-01-18	D7.1	Definition of elements to integrate in the demonstrators	WP7	LASEA	Report	Confidential
24	Jan-18	31-01-18	21-01-18	D7.2	500W system test	WP7	LASEA	Report	Confidential
24	Jan-18	31-01-18	21-01-18	D7.3	200W system test	WP7	C4L	Report	Confidential
24	Jan-18	31-01-18	21-01-18	D8.5	Communication kit mid-term update	WP8	KITE	Report	Public
28	May-18	31-05-18	21-05-18	D5.4	Demonstration of 200W green and 100W UV lasers beams at 1MHz and sub-500 fs pulse	WP5	USTUTT	Demonstrator	Confidential
28	May-18	31-05-18	21-05-18	D7.4	Testing of the optical fibre	WP7	GLO	Report	Confidential
30	Jul-18	31-07-18	21-07-18	D2.4	Processing strategies for high power 3D Si processing	WP2	BOSCH	Report	Confidential
30	Jul-18	31-07-18	21-07-18	D2.5	Processing strategies for high power fine cutting of metal	WP2	C4L	Report	Confidential
30	Jul-18	31-07-18	21-07-18	D2.6	Processing strategies for high power diamond processing	WP2	E6	Report	Confidential
30	Jul-18	31-07-18	21-07-18	D4.6	End-capped PMC module for beam delivery	WP4	GLO	Report	Public
30	Jul-18	31-07-18	21-07-18	D4.7	PMC module based on HC-PCF with improved PER at um (>20 dB)	WP4	GLO	Other	Confidential
30	Jul-18	31-07-18	21-07-18	D8.6	Interim exploitation and dissemination plan	WP8	KITE	Report	Confidential
30	Jul-18	31-07-18	21-07-18	D9.3	2nd Periodic Report	WP9	USTUTT	Report	Confidential
36	Jan-19	31-01-19	21-01-19	D4.8	Final version of PMC module for fibre beam delivery (2)	WP4	GLO	Other	Confidential
36	Jan-19	31-01-19	21-01-19	D6.5	System build-up	WP6	C4L	Other	Public
36	Jan-19	31-01-19	21-01-19	D7.5	Report on the performance of the 500W demonstrator (3D-Si processing) (1)	WP7	BOSCH	Report	Confidential
36	Jan-19	31-01-19	21-01-19	D7.6	Report on the performance of the 500W demonstrator (3D-Si processing) (2)	WP7	BOSCH	Report	Public
36	Jan-19	31-01-19	21-01-19	D7.7	Report on the performance of the 200W demonstrator for diamond ablation	WP7	E6	Report	Confidential
36	Jan-19	31-01-19	21-01-19	D7.8	Report on the performance of the 200W demonstrator for fine cutting metals	WP7	C4L	Report	Confidential
38	Mar-19	31-03-19	21-03-19	D5.5	Thin-disk multipass amplifier with 1000W, >1mhz, sub-1ps	WP5	USTUTT	Demonstrator	Confidential
42	Jul-19	31-07-19	21-07-19	D6.6	System tested and validated	WP6	LASEA	Report	Confidential
42	Jul-19	01-08-19	22-07-19	D7.9	Report on the performance of the 1000W demonstrator	WP7	USTUTT	Report	Confidential

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42	Jul-19	02-08-19	23-07-19	D8.7	Final exploitation and IP strategy	WP8	KITE	Report	Confidential
42	Jul-19	03-08-19	24-07-19	D8.8	Communication kit final update	WP8	KITE	Report	Public
42	Jul-19	04-08-19	15-07-19	D9.4	3rd Periodic & Final Reports	WP9	USTUTT	Report	Confidential

2. Hiperdias Tasks (in order of month due)

Next 6 months

WP No	WP Leader	Lead B	Participants	T.no	Task Description	Start	Finish	Duration in "work" days
WP1	BOSCH	BOSCH	BOSCH,E6,C4L	T1.1	Collection of end-user application specifications	1	4	87
WP1	BOSCH	LASEA	C4L	T1.4	Interface requirements	1	12	262
WP4	XLIM	USTUTT	AMP,AMO	T4.1	Design of grating compressors	1	18	391
WP5	USTUTT	USTUTT	USTUTT	T5.1	Design of the thin-disk multipass amplifier	1	6	130
WP8	KITE	KITE	ALL	T8.1	Web site	1	42	913
WP8	KITE	KITE	ALL	T8.2	Dissemination	1	42	913
WP8	KITE	KITE	ALL	T8.5	Management of Intellectual Property	1	42	913
WP9	USTUTT	KITE	KITE	T9.1	Management and coordination of the project	1	42	913
WP9	USTUTT	KITE	KITE	T9.2	Financial management of the project	1	42	913
WP9	USTUTT	KITE	KITE	T9.3	Management of ethical and gender related issues	1	42	913
WP9	USTUTT	KITE	KITE	T9.4	Establishment of consortium bodies, and of consortium meetings	1	42	913
WP9	USTUTT	KITE	KITE	T9.5	Management of the consolidation of technical and financial reports	1	42	913
WP9	USTUTT	KITE	KITE	T9.6	Monitoring and progress chasing and submission of deliverables and milestones	1	42	913
WP1	BOSCH	BOSCH	ALL	T1.2	Process and system specifications	2	12	241
WP1	BOSCH	BOSCH	C4L, E6	T1.3	Assessment and validation of technical progress	3	12	218
WP2	USTUTT	BOSCH	LASEA	T2.1	Fundamental process development 3D Si processing	3	24	479
WP2	USTUTT	C4L	USTUTT	T2.2	Fundamental process development fine cutting of metals	3	23	456
WP2	USTUTT	E6	C4L	T2.3	Fundamental process development diamond ablation	3	23	456
WP3	AMP	AMP	USTUTT	T3.1	50-W, 300-fs laser >1MHz at 1030nm	3	9	152
WP3	AMP	AMP	USTUTT, AMO	T3.2	200-W, ~500-fs laser >1MHz at 1030nm	3	21	413

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WP3	AMP	AMP	ALL	T3.3	Flexible user interface including high speed modulation a high power pulse train	3	21	413
WP4	XLIM	AMO	USTUTT	T4.2	Development of a lithography process for the fabrication of pulse compression gratings	3	30	608
WP4	XLIM	GLO	AMP, XLIM	T4.4	Fabrication and characterization of photonic microcell (PMC) module	3	36	740
WP6	C4L	LASEA	AMP,C4L,BOSCH,E6	T6.1	Definition of interfaces	3	12	218
WP6	C4L	USTUTT	AMP, C4L,LASEA,GLO	T6.2	Definition of laser & optics sizes; optics specifications (incl. fibre)	3	15	281
WP4	XLIM	AMO	USTUTT	T4.3	Development of an etching process for the fabrication of optical components	5	30	565
WP5	USTUTT	USTUTT	AMP	T5.2	Assembly & characterization of Yb:YAG thin-disk multipass amplifier	6	22	370
WP8	KITE	KITE	ALL	T8.3	Exploitation	7	42	783
WP8	KITE	KITE	ALL	T8.4	Intellectual property and supply chain	7	42	783
WP8	KITE	KITE	ALL	T8.6	Training	7	42	783
WP6	C4L	C4L	LASEA	T6.3	Development of the interfaces	8	22	326
WP6	C4L	C4L	USTUTT,AMP, LASEA	T6.4	System layout and build-up	8	36	631
WP6	C4L	C4L	USTUTT, AMP, LASEA	T6.5	Integration of laser and optics	8	24	370
WP4	XLIM	GLO	AMP, XLIM	T4.5	Design/Fabrication of photonic microcell module with integrated coupling optics	12	36	544
WP4	XLIM	XLIM	GLO	T4.6	Design and Fabrication of polarization maintaining hollow-core photonic crystal	12	36	544
WP6	C4L	LASEA	USTUTT, AMP,C4L,BOSCH,E6	T6.6	Test and evaluation	14	42	631
WP7	LASEA	LASEA	USTUTT,AMP,	T7.1	500W Laser source integration	18	21	87
WP7	LASEA	LASEA	C4L	T7.5	Data handling and management	18	42	543
WP5	USTUTT	USTUTT	AMP	T5.3	Second and third harmonics generations	20	28	195
WP7	LASEA	C4L	AMP	T7.2	200W Laser source integration	21	24	88
WP2	USTUTT	USTUTT	C4L, BOSCH, LASEA	T2.4	Upscaling of applications for high throughput	22	30	195
WP5	USTUTT	AMP	USTUTT	T5.4	Integration of the Yb:YAG thin-disk multipass amplifier	22	28	152
WP7	LASEA	GLO	USTUTT,AMP,C4L,LASEA	T7.3	Integration of the optical fibre	24	28	109
WP7	LASEA			T7.4	Processes analysis on reference sample	24	42	413
WP7	LASEA	BOSCH	USTUTT, LASEA	*T7.4.1*	*Process analysis on reference samples*	24	42	413
WP7	LASEA	E6	C4L	*T7.4.2*	*Process analysis on reference samples*	24	42	413

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WP7	LASEA	C4L	C4L	*T7.4.3*	*Process analysis on reference samples*	24	42	413
WP5	**USTUTT**	**USTUTT**	**AMP**	**T5.5**	**Demonstration of a 1kW, sub-1ps laser system**	**27**	**38**	260
WP7	**LASEA**	**LASEA**	**USTUTT, AMP,C4L**	**T7.6**	**Upgrade of the 500W system in the machine to the 1000W system**	**30**	**42**	283

3. Group Photo

Hiperdias 1st Consortium Kick-Off meeting

From left:

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