

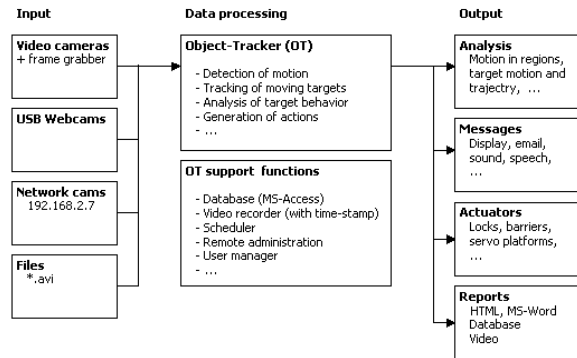
Wolf Technologieberatung - Object-Tracker (OT) is a young, technology-oriented Austrian company that focuses on monitoring of the human environment, human behavior, and human wellbeing and performance using

1. Wearable multi-sensor data recorders, and
2. Image / video analysis technology.

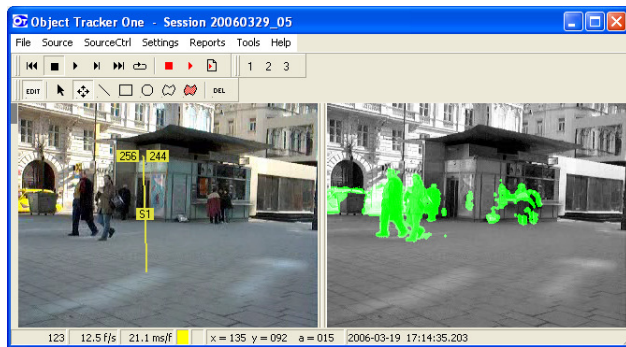
Products:

OT has developed two product lines and continues to improve and adapt these developments to various application areas:

OT Track: OT-Track is a modular and extensible software system for video acquisition, motion detection, motion analysis, and tracking of moving targets (e.g., persons, vehicles) in real time. OT-Track provides a robust platform with a variety of functional blocks that are combined as required by the specific application. The software features: Standard interfaces to connect to video sources, image pre-processing, several algorithms to detect and analyze motion, target tracking, video recording, database connectivity, scheduling, messaging, remote administration. A 3D version of this software is under development. This development will allow the measurement of true 3D position, velocity, size, and trajectory of moving objects.



Functional diagram of OT-Track

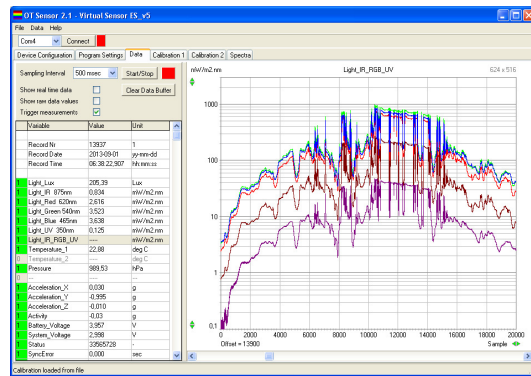


Screenshot of OT-Track program

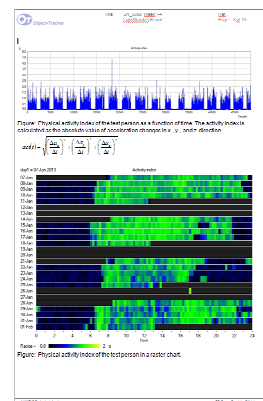
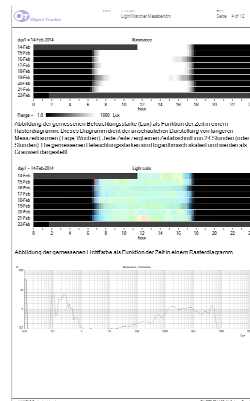
OT Personal Data Recorder: This device is a small, wearable, battery operated data acquisition system that measures and records 12 important ambient variables of the working environment of persons. Monitored variables include: Spectral intensity of illumination, UV and IR light, temperature, humidity, barometric pressure, accelerations, and magnetic field strength. The device measures only 20 mm x 50 mm x 10 mm, has a mass of 12 grams, and can operate for several weeks on a single battery charge.



OT Personal Data Recorder and anatomical mounts.



Screenshot of OT-Sensor program.



Analysis of recorded data and presentation of data in an automatically generated report.

OT LimeCam:

LimeCam is an integrated, portable multi-sensor optical instrument for the detailed characterization of light installations / assessment of light situations in the application areas road lighting, office lighting, and architecture. The system includes several light sensors, a small spectrometer, a GPS receiver, and a calibrated camera.



The system is typically operated on a moving platform (car) that moves with velocities of up to 80 km/h along the planned track. The system yields a database of light points with accurate geo-position, mounting height above ground, illuminance / irradiance data, and a photographic documentation of individual light points.



OT Light Tracker	Lat	Longitude	Mounting Height	Ref. Date	TF (s)
48.137263	16.341586	024.9	0	19.2	4.6
16.341586	024.9	0	30.4	30.4	0
00:00:00	44.2	0	10.8	10.8	0
48.137425	16.340371	802.1	0	44.0	4.8
16.340371	802.1	0	90.4	90.4	0
00:00:00	39.6	0	30.0	30.0	0
48.137412	16.340062	888.6	0	28.8	3.2
16.340062	888.6	0	54.0	54.0	0
00:00:00	35.3	0	18.0	18.0	0
48.137373	16.340112	837.5	0	71.4	9.8
16.340112	837.5	0	41.4	41.4	0
00:00:00	36.4	0	11.8	11.8	0
48.137443	16.339989	961.9	0	25.2	7.1
16.339989	961.9	0	44.4	44.4	0
00:00:00	41.1	0	19.2	19.2	0
48.137514	16.339991	865.9	0	31.8	10.6
16.339991	865.9	0	54.0	54.0	0
00:00:00	43.8	0	25.8	25.8	0
48.137576	16.339889	1012.4	0	35.4	10.2
16.339889	1012.4	0	60.6	60.6	0
00:00:00	44.4	0	21.0	21.0	0
48.137644	16.339900	1028.3	0	41.8	10.7
16.339900	1028.3	0	54.0	54.0	0
00:00:00	46.2	0	21.0	21.0	0
48.137689	16.338740	1000.8	0	46.2	10.2
16.338740	1000.8	0	84.6	84.6	0
00:00:00	47.2	0	24.6	24.6	0
48.137725	16.338398	1098.3	0	49.2	10.7
16.338398	1098.3	0	88.2	88.2	0
00:00:00	47.1	0	42.0	42.0	0
48.137721	16.338056	1111.6	0	42.6	12.4
16.338056	1111.6	0	85.2	85.2	0
00:00:00	45.3	0	43.8	43.8	0
48.137689	16.337050	1140.3	0	43.8	10.6
16.337050	1140.3	0	87.6	87.6	0
00:00:00	44.2	0	39.6	39.6	0
48.137664	16.337004	1166.8	0	73.8	13.9
16.337004	1166.8	0	140.4	140.4	0
00:00:00	40.6	0	64.8	64.8	0

Lichtpunkt L-15

Name	Wert	Bemerkungen
Geogr. Breite	48.140361 deg	Eintr = 0.33 m
Geogr. Länge	16.340368 deg	Eintr = 0.11 m
Geogr. Höhe	331.57 m	Eintr = 5.43 m
Lichtpunkt Höhe	8.80 m	Eintr = 0.13 m
Distance alt.	543.34 m	geradlinige Strecke mit Messbeginn
Distance rel.	26.34 m	Distance zum vorigen Lichtpunkt
Gerichte	47.56 km/h	46.2
Beleuchtungsstärke	4.24 lux	Wert korrigiert für Messortshö. (kor = 0.786)
Bezir. ströme IR	0.0 microw/m2.von	
Bezir. ströme Rot	32.8 microw/m2.von	
Bezir. ströme Grün	43.2 microw/m2.von	
Bezir. ströme Blau	17.4 microw/m2.von	

Beleuchtungsdiagramme des Lichtpunktes In=41

Ref = M19	Ref = M14	Ref = M113	Ref = M291
Ziel = 22.20.33	Ziel = 22.25.45	Ziel = 22.30.43	Ziel = 22.33.79
Eintr = 5.83 lux	Eintr = 5.20 lux	Eintr = 5.19 lux	Eintr = 5.85 lux
Eintr = 6.06 Lux	Eintr = 6.47 Lux	Eintr = 3.85 Lux	Eintr = 3.86 Lux

Photos des Lichtpunktes In=41

Ref = P15	Ref = P10	Ref = P211	Ref = P287
Ziel = 22.25.19	Ziel = 22.25.43	Ziel = 22.30.43	Ziel = 22.33.79

Karte der Messungen des Lichtpunktes

Data generated with LimeCam support decision-makers in the difficult process of planning investments in maintenance and upgrading of light installations, focusing the attention to locations where investments are necessary and most effective.

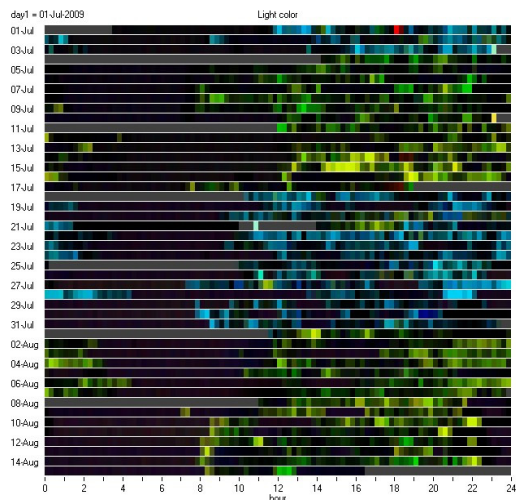
Projects:

FAMOS: The company participated in the Fatigue Monitoring System (FAMOS) project. This project was partially funded by ESA and aimed at the development of a non-invasive system to objectively monitor and forecast the fatigue/alertness level of ground operators and astronauts during routine tasks and science specific tasks.

EuClock: EuClock was a EU FP6 co-funded 5-year project that investigated the underlying mechanisms of the circadian biological clock under entrainment. In this project, the company developed a small, wearable multi-sensor data recorder for field studies that investigated the effect of time course, intensity and spectral composition of ambient light of the circadian biological clock of test subjects.

AustroMars: The AustroMars experiment simulated a manned landing on planet Mars. A crew of 6 study participants lived and worked for 2 weeks in the Mars Desert Research Station MDRS, located in Utah, USA, in April 2006. For this experiment, the company provided the OT-Track system to monitor and analyze crew activity. The company was also principal investigator PI of the fatigue monitoring experiment that compared several methods / technologies to assess crew alertness / sleepiness levels.

Concordia 2009: Concordia is a research station located in the Antarctic. The company was coordinator of Experiment 'Blue Light' that investigated the effect of blue-enhanced illumination on the Concordia crew throughout a polar winter. The company supplied a set of wearable OT LightWatcher Data Recorders for this experiment.



Cartracker-3: The Company developed a tracking device for trucks for a Dutch company. This device logs vehicle position (via GPS), driver identity, and selected vehicle variables, and transmits data via the cellular network (GSM/GPRS) to a server.

Application areas:

Our products are applied in the following areas:

Life sciences, health: Studies of biological rhythms, sleep-wake cycles, level of activity and well-being, work medicine, shift work, light therapy of seasonal depression, fitness, sports, training assistance.

Behavioral analysis: Monitoring of the activity of individual subjects at work places, monitoring of alertness and fatigue, counting of moving objects (e.g. cars) and subjects, quantification of pedestrian streams, characterization of crowd density and behavior, characterization of customer behavior and trajectories.

Architecture: Design of natural and artificial lighting schemes, ergonomic design of work places, mapping of light installations in the public and private sector.

Physical science: Monitoring of the environment, meteorology, stratospheric balloons.

Services:

The company offers competence and experience for the planning and management of technical projects (Member of the Austrian Task Management Group ATMG, Member of the Project Management Institute PMI, Certified Project Management Professional PMP, Certified Process Manager), and skills in related working techniques.

Awards:

2002 3rd Price Genius Contest, Austria.
2006 2nd Price CAST Technology Award, Austria.
2012 1st Price Genius Contest, Austria.

Contact:

WOLF Technologieberatung - Object-Tracker
Elisabethstrasse 4
2380 Perchtoldsdorf, Austria

Phone: +43-780-111220
Email: office@object-tracker.com
Web: www.object-tracker.com

Registration Nr.: 317-MDW1-G-06288
UID, VAT-ID: ATU62700606