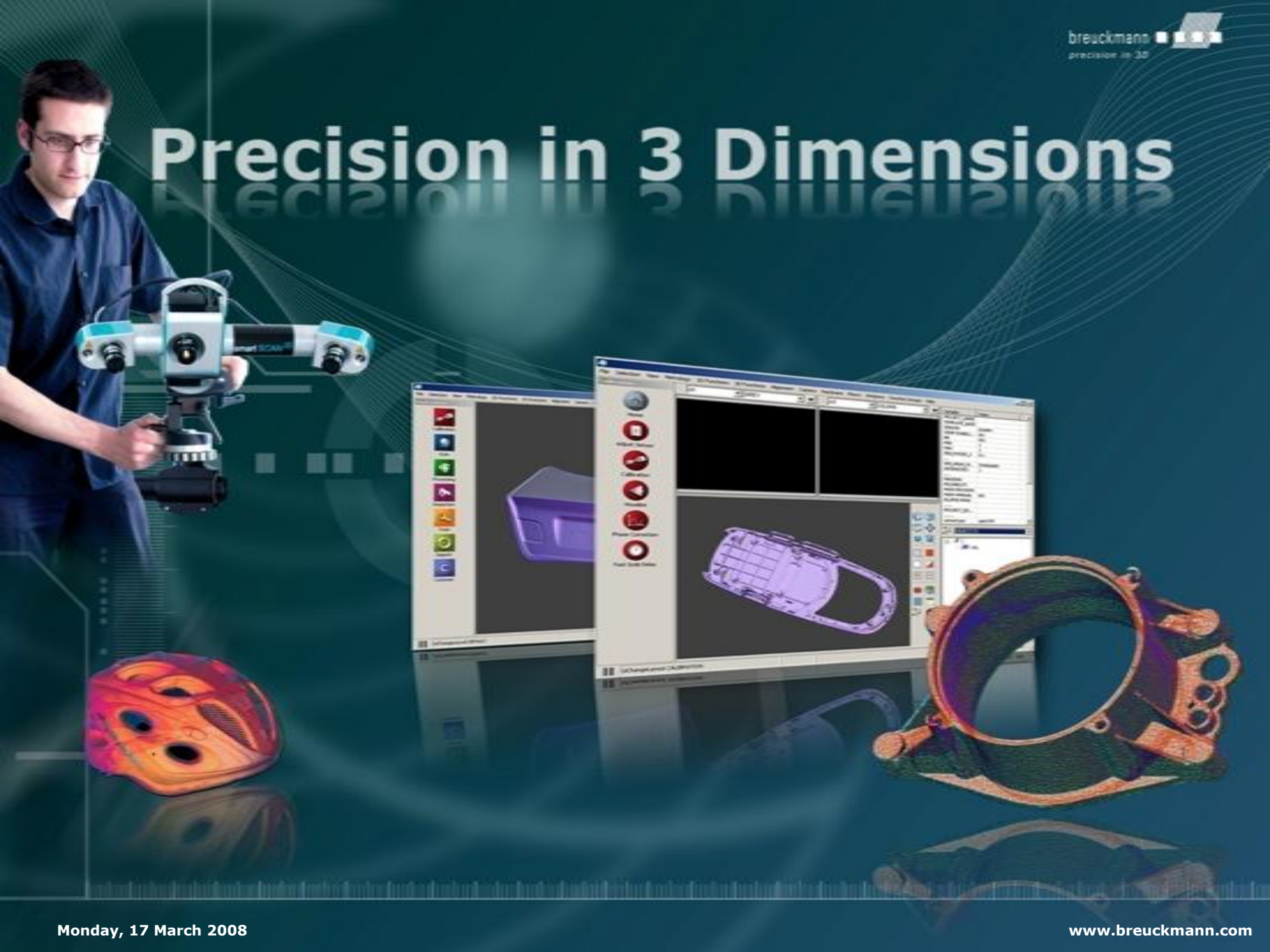

breuckmann
precision in 3D
Precision in 3 Dimensions

# EVAN-Workshop
## about

# Surface Scanning of Soft and Hard Tissue

by
Bernd Breuckmann

# Surface Scanning of Soft and Hard Tissue

## June 11th to 13th, 2008

**Breuckmann GmbH**

**Torenstr. 14**

**Meersburg, Germany**

**Alexandre.Bourdeu@breuckmann.com**

**Phone : +49 (0)7532 4346-28**

# Participants will learn :

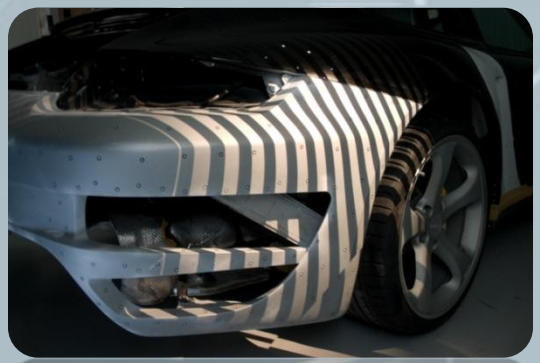
- Why to use 3D-technology
- Overview on different surface scanning techniques
- Fundamentals of Topometric metrology
- Advantages and limitations
- Practical applications
- How to use 3D-surface scanners
- Best Practice Guide

# Preliminary Program :

**June 11th :**

| | |
|---|---|
| **13.00** | **Arrival, Welcome** |
| **14.00 – 15.00** | **Introduction to Topometric 3D-Scanning Technique** |
| **15.00 – 15.30** | **Coffee Break** |
| **15.30 – 17.00** | **Practical Guide :** |
| | **How to plan and carry out a 3D-scanning task** |
| **17.00 – 17.30** | **Discussion** |

**19.00 Dinner**

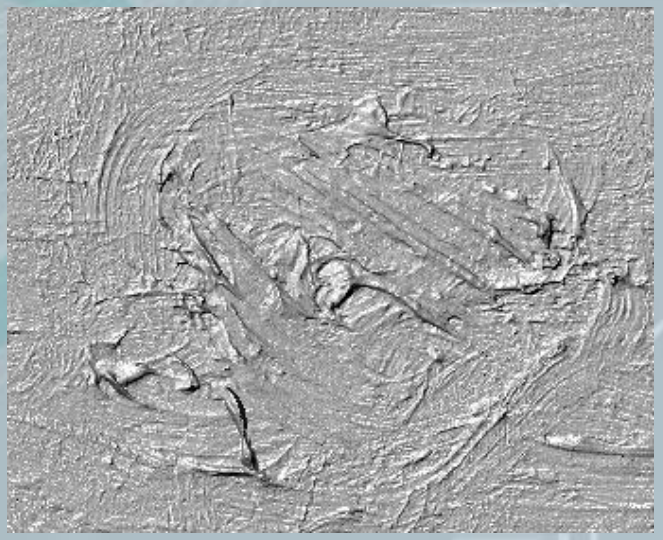


# Preliminary Program :

## June 12st :

**Practical courses in small workgroups**

| | |
|---|---|
| 9.00 – 10.30 | Part 1 |
| 10.30 – 11.00 | Coffee Break |
| 11.00 – 12.30 | Part 2 |
| 12.30 – 14.00 | Lunch |
| 14.00 – 15.30 | Part 3 |
| 15.30 – 16.00 | Coffee Break |
| 16.00 – 17.30 | Part 4 |



# Preliminary Program :

## June 13th :

| | | |
|---|---|---|
| 9.00 – | 9.45 | Best Practice Guide |
| 9.45 – | 10.30 | Applications in Virtual Anthropology |
| 10.30 – | 11.00 | Coffee Break |
| 11.00 – | 12.30 | Questions, Discussions |

# Course 1 :

## Measuring system : stereo*SCAN*-3D :

- **HighEnd 3D-measuring system**
- **2 CCD cameras, each 5 MPixel**
- **FOV : about 90 mm**
- **spatial resolution : about 20 µm**

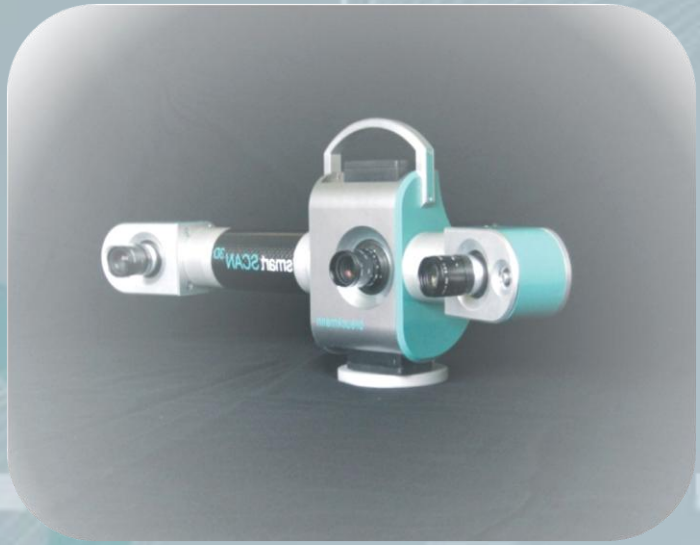
**Object : jaw UR501**

**Measuring strategy : index marks,**
**automatic positioning system**

# Course 2 :

## Measuring system : tri*TOS*-3D :

- **HighPerformance 3D-digitization system**
- **2 color CCD cameras, each 1.4 MPixel**
- **FOV : about 400 mm**
- **spatial resolution : about 200 µm**



**Object : skull, mask**

**Measuring strategy : alignment by means of object geometry**

# Course 3 :

## 1. Measuring system : face*SCAN*-180 :

- **In-vivo digitization of human faces**
- **2 sensors, with 1.4 MPixel color camera**
- **FOV : about 600 mm**
- **spatial resolution : about 400 µm**

## 2. Pre-Processing of 3D-data :

**From recorded raw data to a merged model**

- **alignment**
- **3D filter**
- **3D data compression**

# Course 4 :

## 1. Application orientated data evaluation :

**How to optimize the resulting data with respect to a given measuring task**

## 2. Post-Processing of 3D-data :

- **hole filling**
- **data reduction**
- **texture mapping**

# Overview of Workshop

| June 11th | | June 12th | | June 13th | |
|---|---|---|---|---|---|
| | | 9.00–12.30 | Practical Courses | 9.00- 12.30 | Lectures Discussions |
| 13.00 | Arrival | 12.30 | Lunch Break | 12.30 | End of Workshop |
| 14.00–17.30 | Lectures Discussions | 14.00-17.30 | Practical Courses | | |
| 19.00 | Dinner | | | | |

# Application

1. To prepare the workshop, we need your application as soon as possible

2. Strict deadline : March 31st

Thank you for your understanding