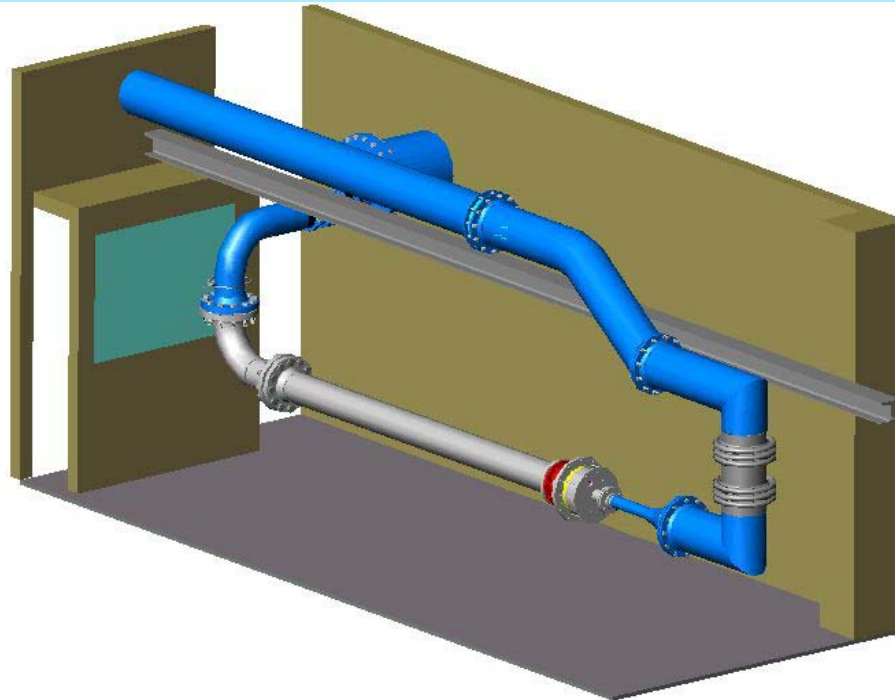


Development of an Innovative **F**lameless **O**xidation **COM**buster with low NO_x Level

Work-package 8: Pilot Combuster Testing

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21th Nov 2003

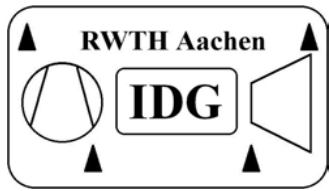
Bari

Italy

Univ.-Prof.Dr.Ing. D. Bohn

Dipl. Ing. Nils Ohlendorf

Institut of Steam and Gas Turbines, Aachen University Germany

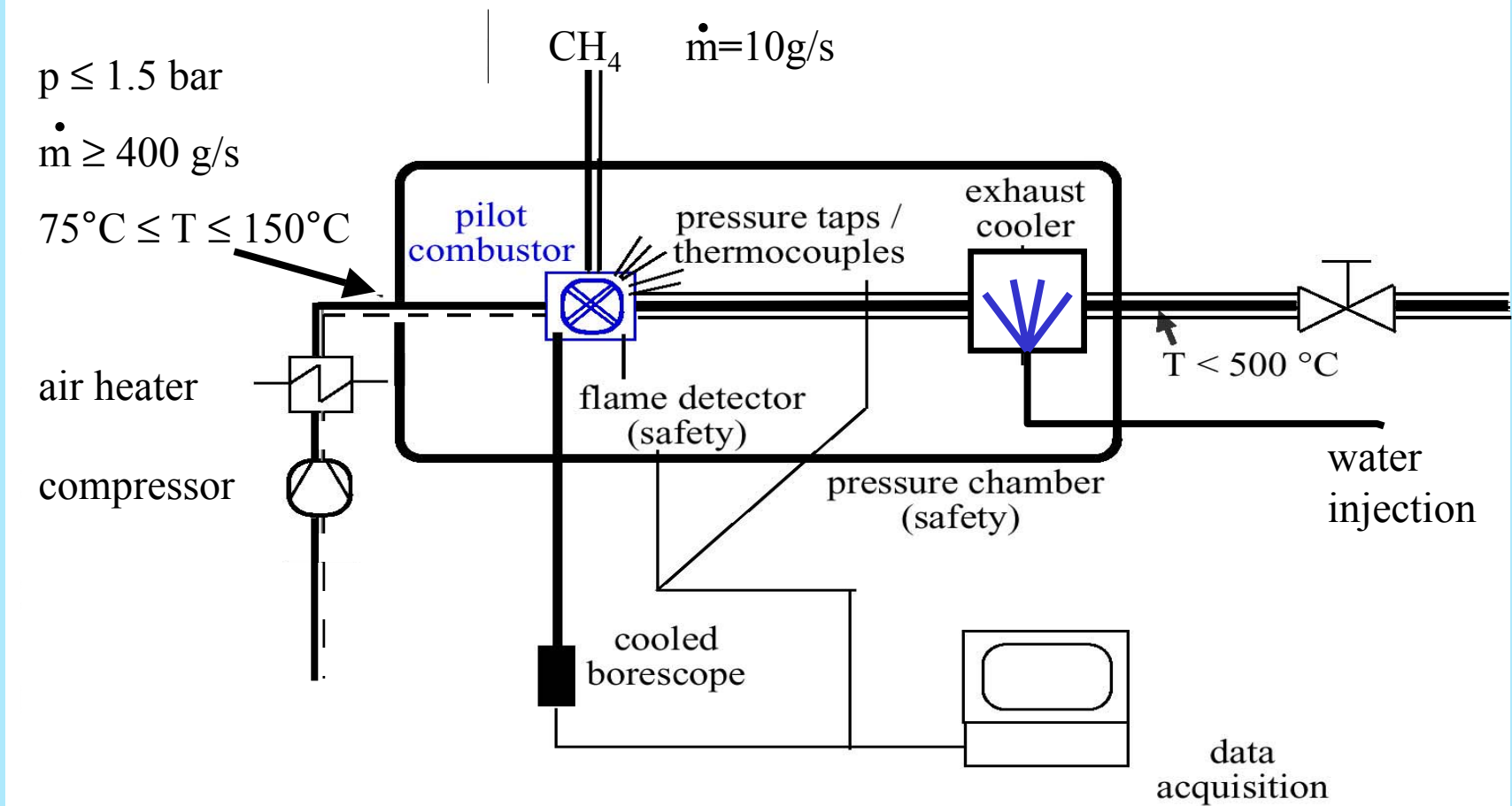


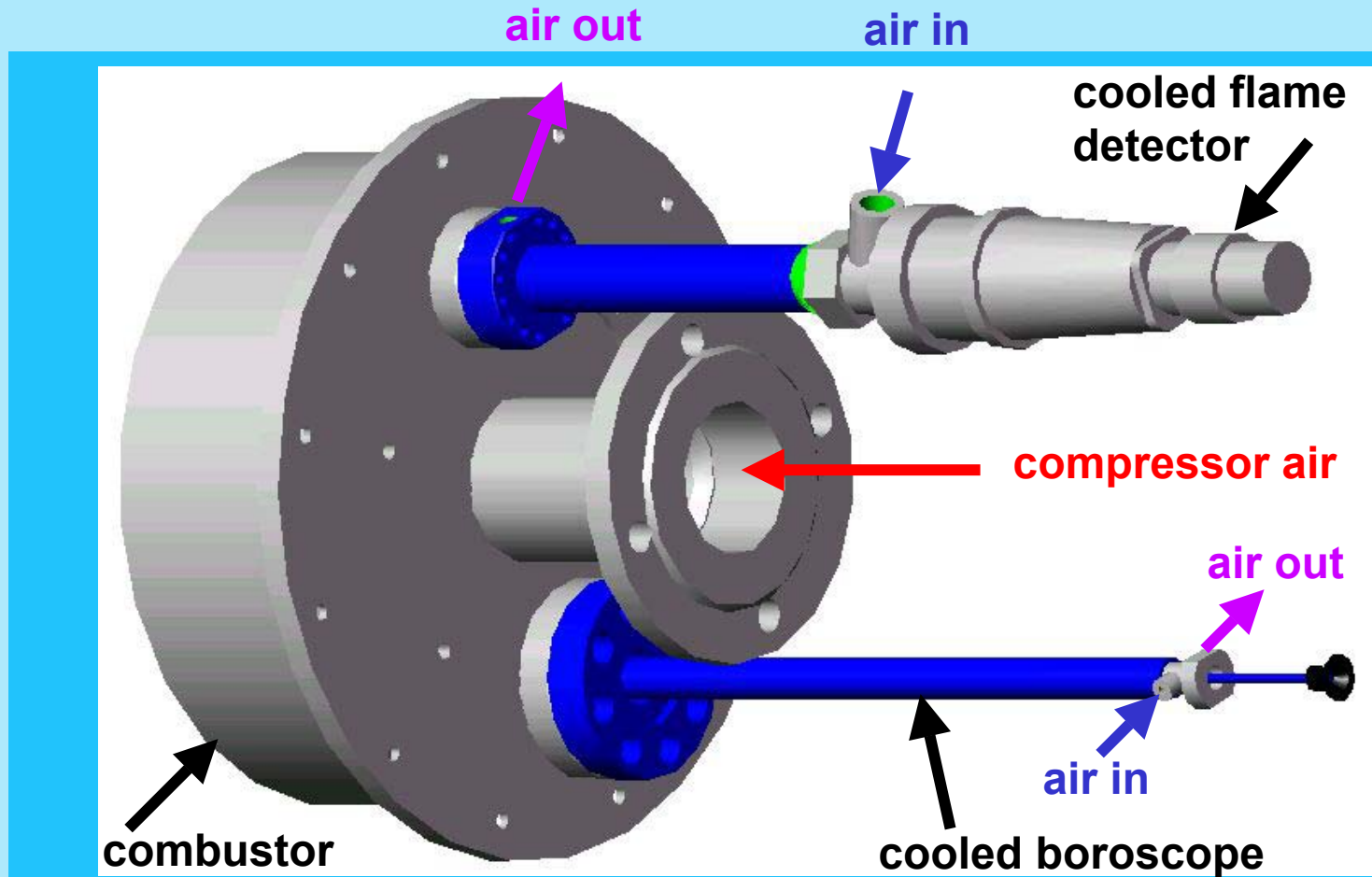
Overview

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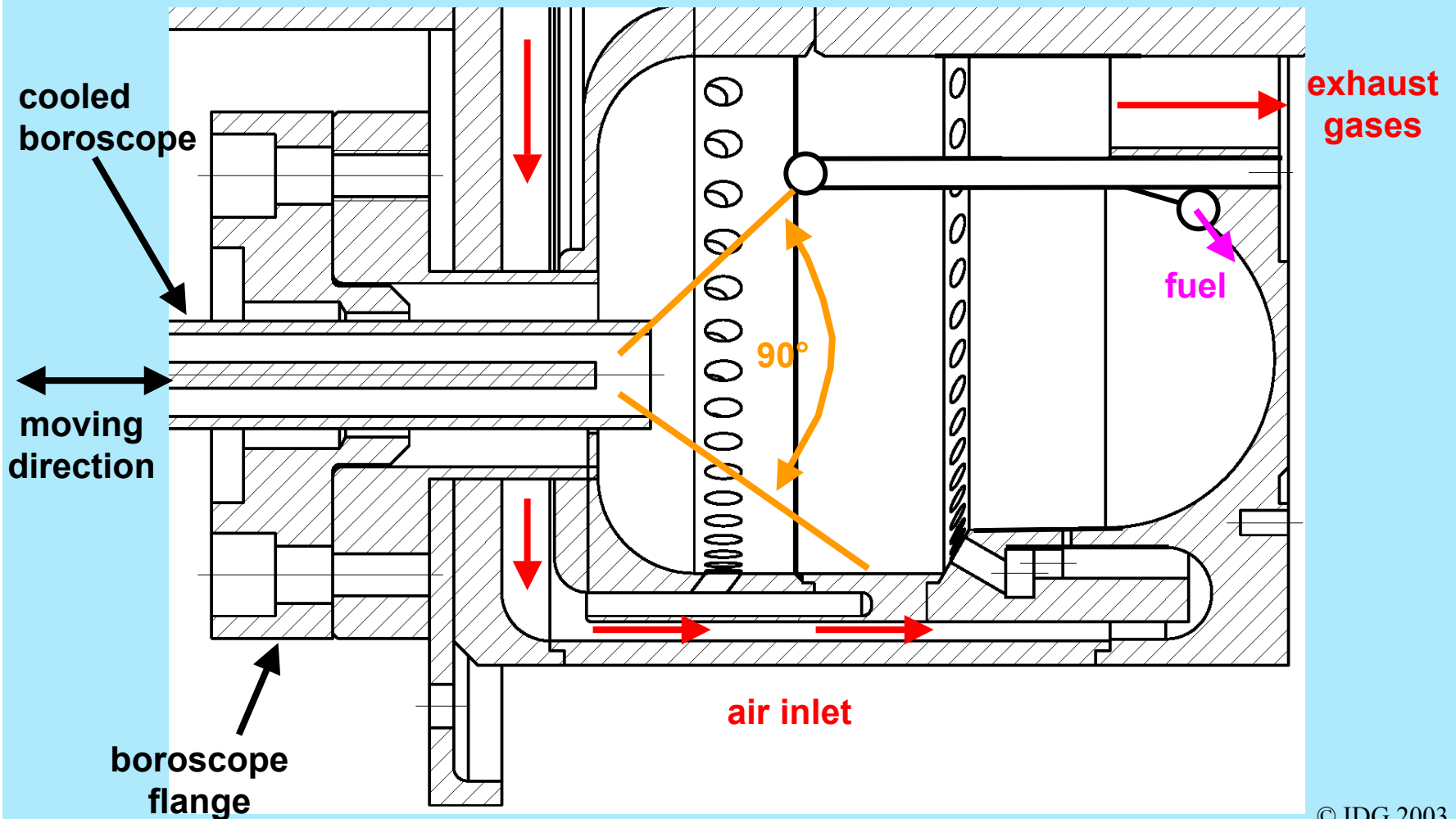
- **Block diagram**
- **Boroscope and flame detection concept**
- **Review old test rig**
- **Integration of the rig in the test field**
- **Status quo**
- **Prospect**

Block Diagram

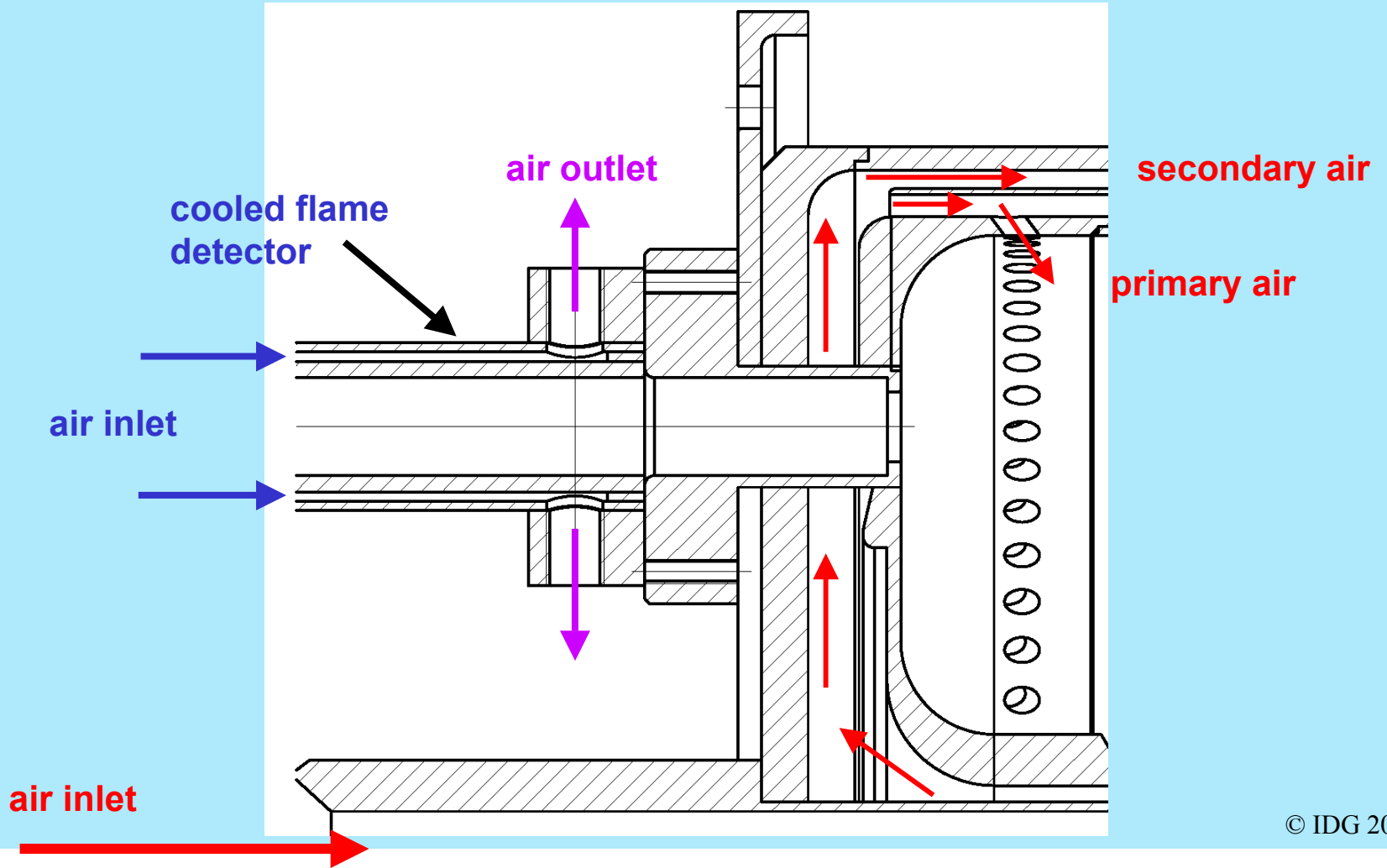




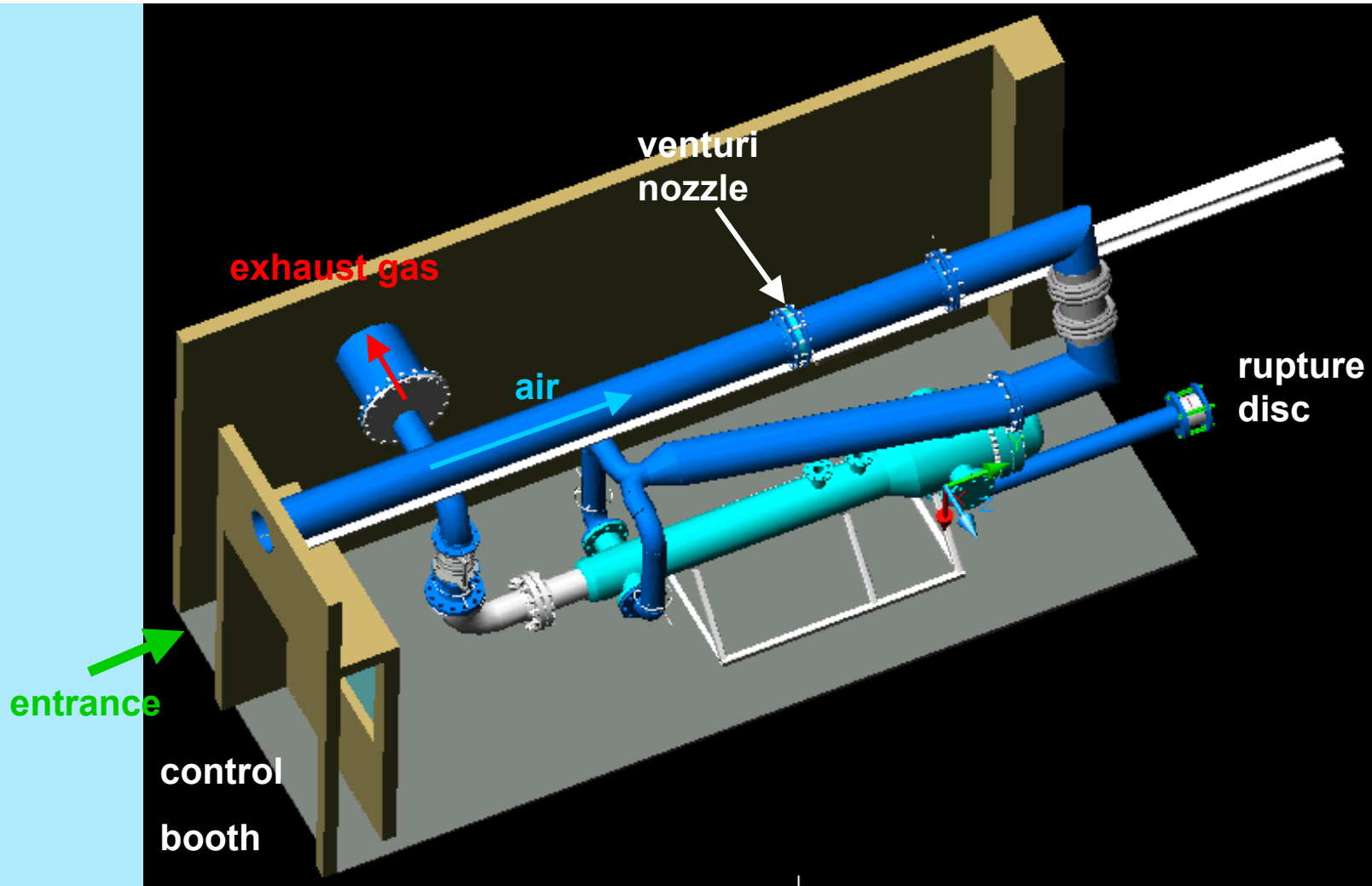
Boroscope Concept



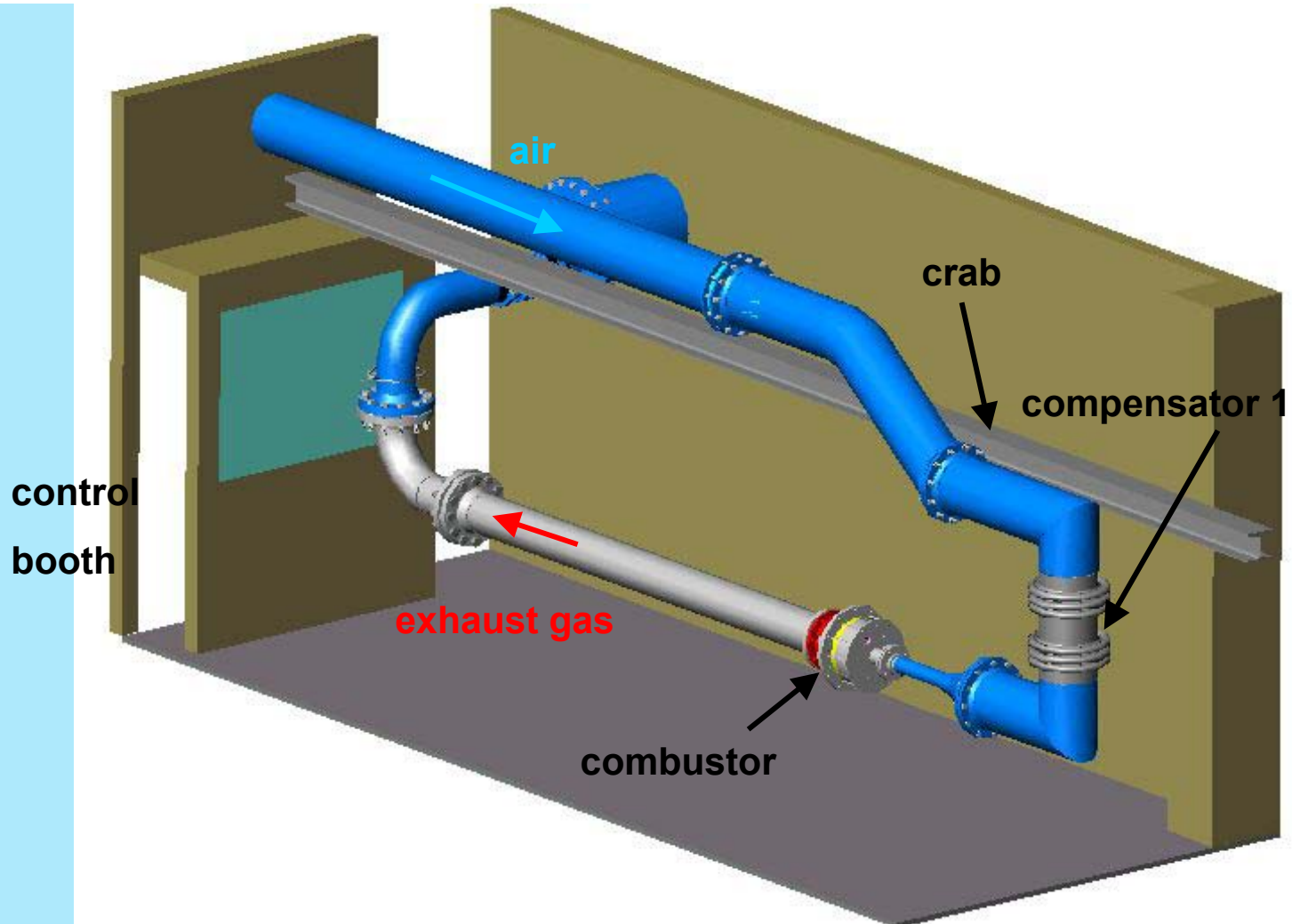
Flame detection concept

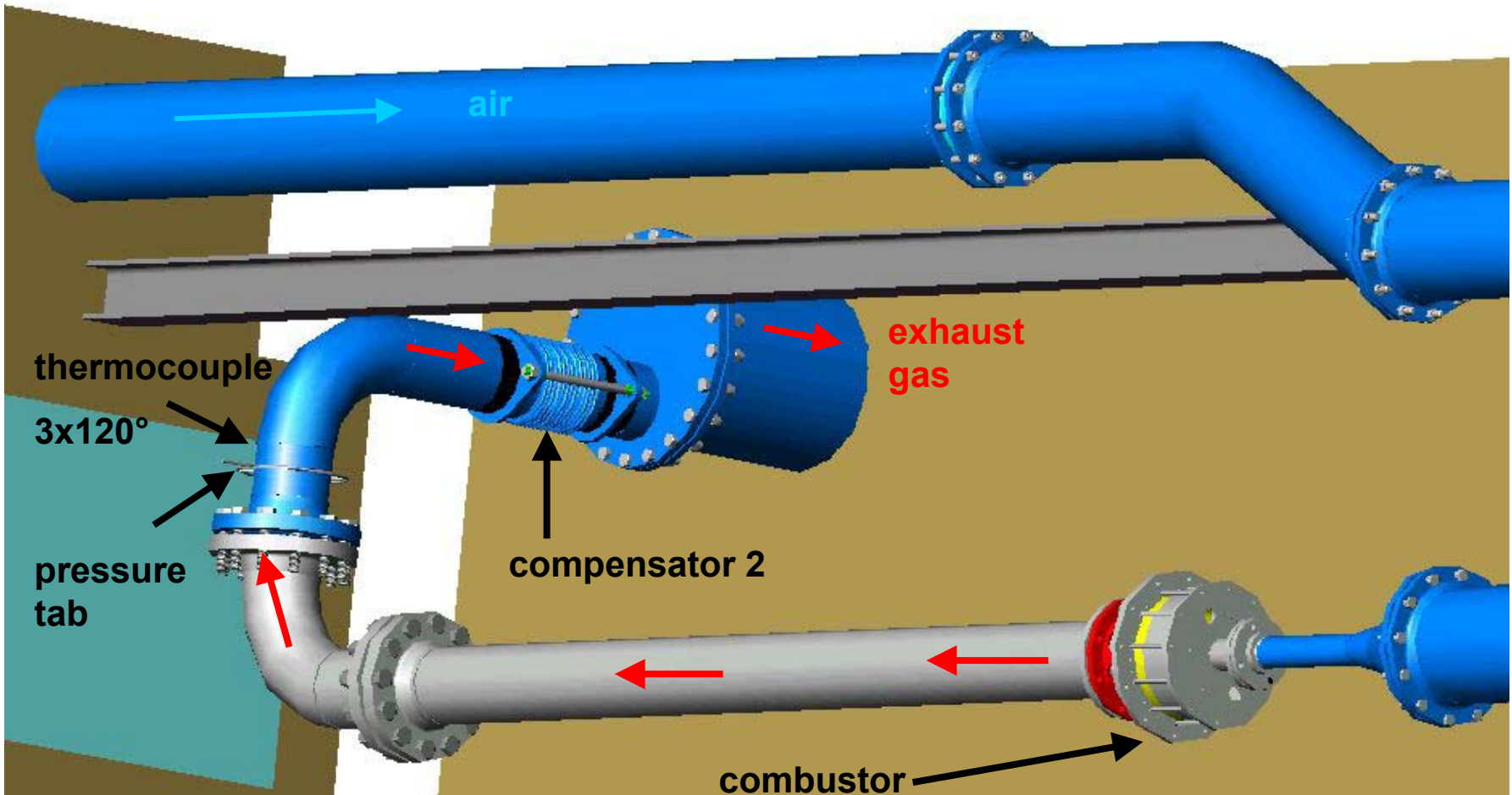


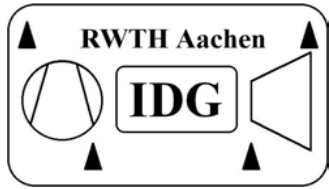
Review pressurized setup



Integration in the testbox 1



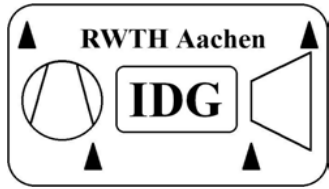




Measurement program

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- Two bottle packs each with 12 bottles CH_4 = volume 240m^3
- Under full load → 50 min measurements
- Warm up (estimated) 2h for compressor and pipe system
- 15min per run → 3 runs each day
- Match fixing measurement matrix
- Parameter settings \dot{m} , λ , p , geometry



Status quo

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• Design integration of boroscope flange

Done

• Design and construction of the safety system (flame detector)

Done

• Assembly of the interface to the pilot combustor

Done

• Data acquisition program

Done

• Setup exhaust gas analysis system

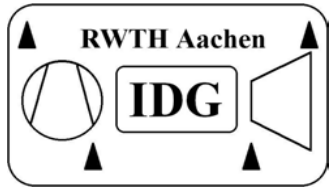
Done

• Integration of the unavailable test rig

In work

• Integration of in air heater in inlet pipe system (after lowering the air mass flow)

In work



Open points

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- **Delivering Date of the combustor**
→ Mid of January
- **Information exchange:**
**Calibration data from the thermocouples
(Technion)**
Type of adapter and parameter for:
 - a) exhaust cooler (pressure level)
 - b) CH₄ pipe (pressure level)