

# Certification, performance and quality

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# Value of independent verification

- Independent verification of manufacturer's claims
- Allows comparisons between products and manufacturers
- Allows calculation of energy consumption over live span
- Increases confidence for consultants, no need to over-size
- Provides energy labelling, also for hot and humid climates
- Easy to apply, but verification by database is essential

# ECC programme overview



## VENTILATION & INDOOR AIR QUALITY



## INDOOR CLIMATE



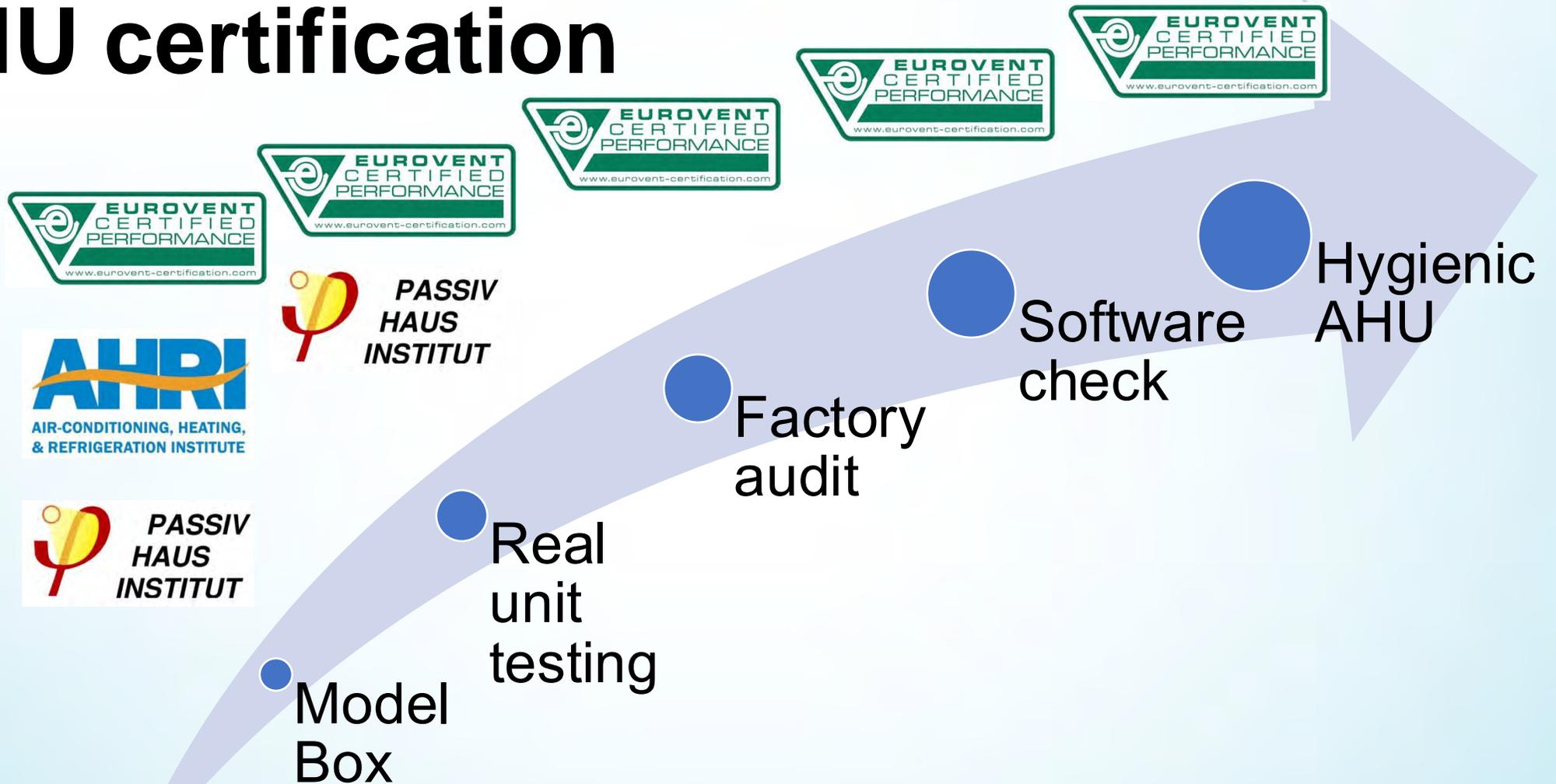
## PROCESS COOLING & FOOD COLD CHAIN



# Eurovent AHU certification

- Heavily customised machinery which is difficult to certify
- Other organisations certify individual parts, but not the complete system
- About 80% of AHUs sold in Europe and 60% in Middle East are Eurovent certified
- Tested for mechanical and electrical performance characteristics, incl. sound power, ERC, and selection software
- Testing regime with annual recurrent audits
- Global benchmark for AHU certification

# AHU certification



# Model box

Casing	ECP	Passivhaus	AHRI
Casing Deflection Rating Class	✓		✓
Casing Air Leakage Class	✓	✓	✓
Thermal Transmittance Class with Leakage	✓		✓ (option)
Thermal Transmittance Class without Leakage			✓ (option)
Thermal Bridging Class	✓		✓ (option)
Acoustic Insulation	✓		
Filter Bypass Leakage	✓		

# Real unit testing

Real Unit Performances	ECP	Passivhaus	AHRI
Energy Recovery Rate	✓	✓	N/A
Octave band in-duct sound power level	✓		
Air flow	✓		
Total electrical power consumption of the ventilation apparatus	✓	✓	
Acoustic Performance	✓	✓	
Energy Efficiency	✓	✓	

# Energy labelling

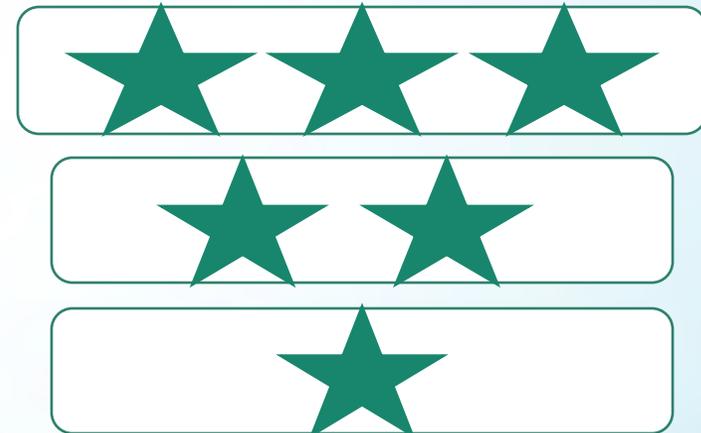
## Summer label

- Calculated based on ASHRAE weather data
- Energy label according to project location



# Hygienic AHUs

- The Hygienic option is a certification by range
- 3 levels of certification represented by stars
- requirements are listed in the Appendix H TCR ECP-05-AHU-2021



# Hygienic AHUs

	Offices, schools, hotels, retail ...  Level 1 ★☆☆	Hospitals  Level 2 ★★☆☆	Pharmaceutical, food processes, white rooms  Level 3 ★★★
Corrosivity class for metallic materials	At least C3		At least C4
Thermal Bridging class	At least TB3		At least TB2
Casing Air leakage Class	At least L2 (M)* & L2(R)*		At least L1 (M) & L1(R)
Water Drainage from pans, condense trays and water tanks	95%		
Filters class (supply side)	epm1 50%		epm1 85%
Number of filter on supply side	1	2	
Fin thickness	0.10 mm	0.12 mm	
Minimum distance between fins (cooler)	2.5 mm		3.0 mm
Minimum distance between fins (heating)	2.0 mm		2.5 mm

Specifications are subject to change without notice.

\* M= model box, R= real unit

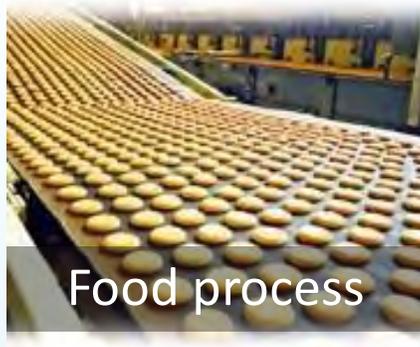
# Hygienic levels



# Hygienic levels



# Hygienic levels



# What is Quality?

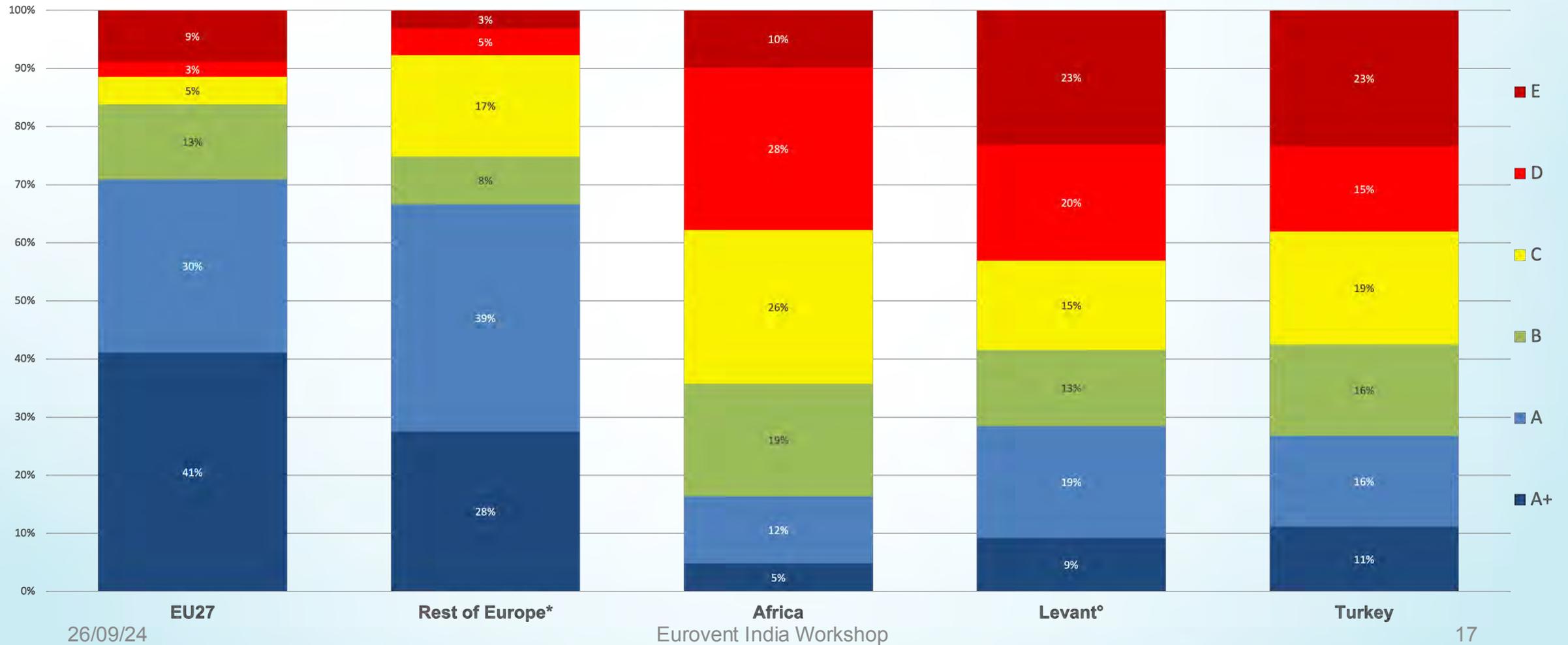
## Performance + Durability

# Performance

## Relevant aspects

- Electrical, mechanical, acoustical performance
- Certification
- But WHAT is certified, and under what conditions?
- How about flat-packed AHUs?
- What is good performance?

## Market 2023 - Distribution by Energy Class



# Quality

## Performance Certification not enough to ensure quality!

- Quality is determined by many more factors, for instance:
  - Materials, makeshift, easiness of maintenance, accessibility
  - Question of hinged doors, opening mechanisms, hazard protection
  - Protocols and documentation
  - Storage and delivery

Eurovent Industry Recommendation / Code of Good Practice



Eurovent 6/18 - 2022

### Quality criteria for Air Handling Units

First Edition

Published on Thursday, 13 October 2022 by  
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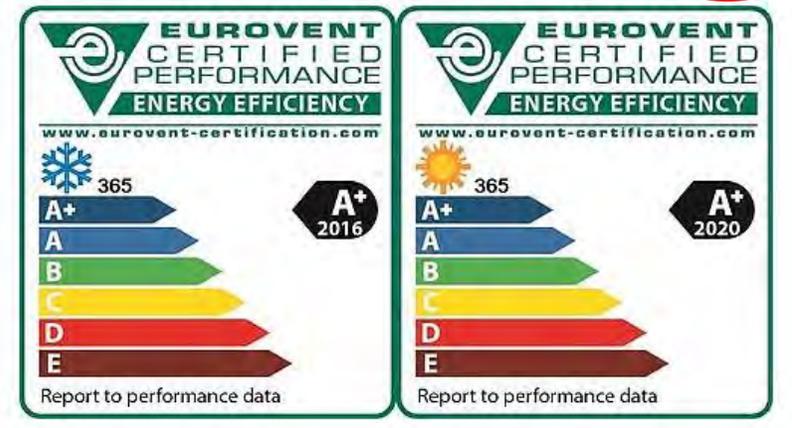
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# How to specify a good AHU?

- Eurovent Certified
- Minimum energy class A or B
- Hygienic level 1 (general spaces)



# Summary

- Durability and performance are key!!
- They safeguard energy consumption, integrity of the system, building health, investment
- Sustainability = lower TCO business case
- O&M training and protocols extremely important!

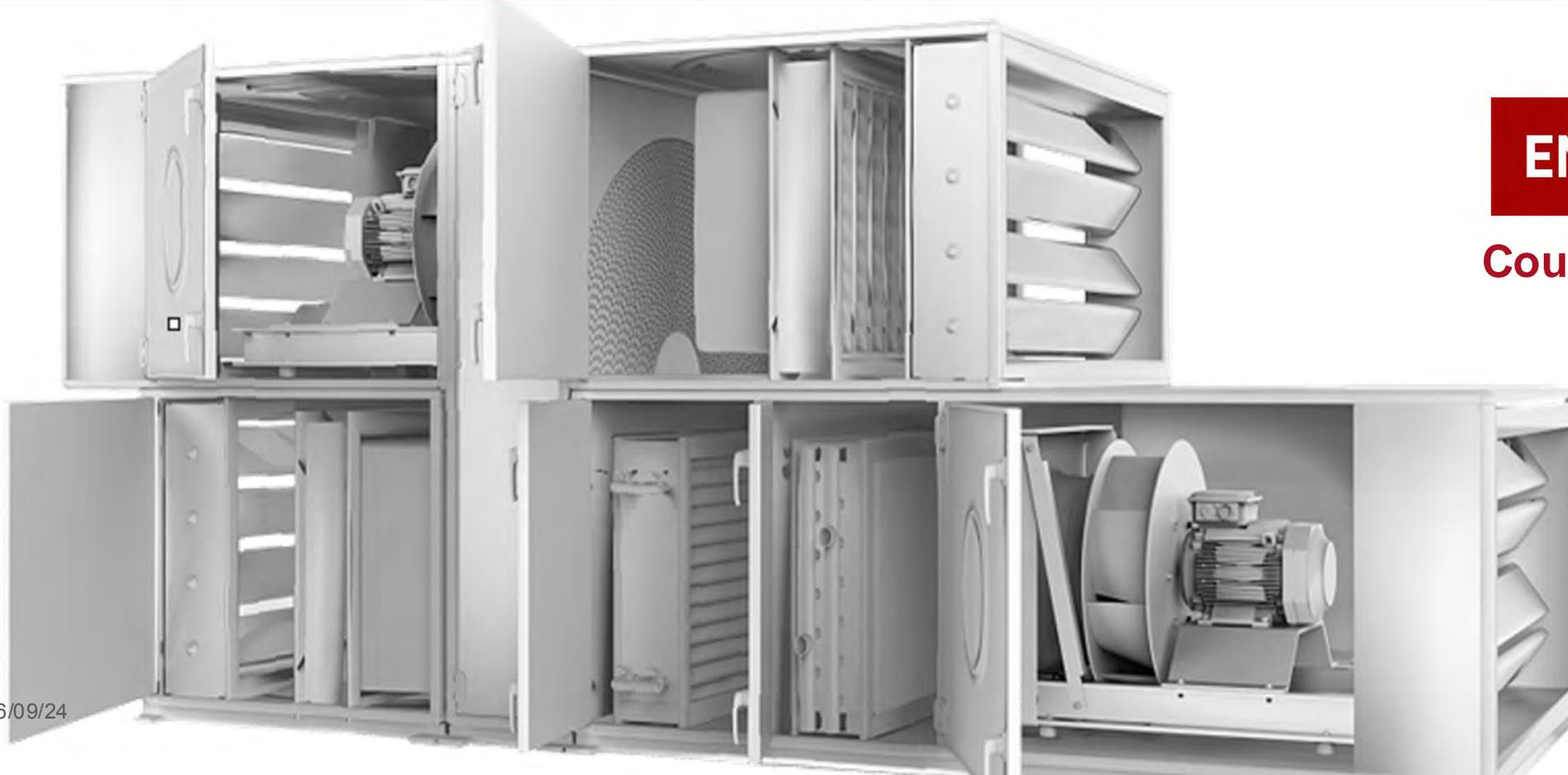


# Knowledge Development Course AHU Specialisation

Start date: October 15, 2024

**ENROLL NOW**

**Course fee 150 EUR  
10 Modules**



# AHU Specialisation Course

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- 2 times a week (Tuesdays, Thursdays, 14:30h IST)
- Registration via [www.eurovent.me](http://www.eurovent.me)
- Course certificate
- Target audience: engineers, consultants, operators

# Q&A

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