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How to solve the biggest Indoor Air Quality problem in the Middle East

Lifa Air Ltd
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President

LIFA AIR
www.lifa.net

Lifa Air Ltd

Company founded in 1988, since then focusing on combating with:

(i) environmental pollutants, (ii) airborne diseases, and (iii) air security

Two main product lines:

– Ventilation Hygiene

– Building Protection Solutions

OFFICES:
Helsinki
Hong Kong
New York

LIFA AIR®
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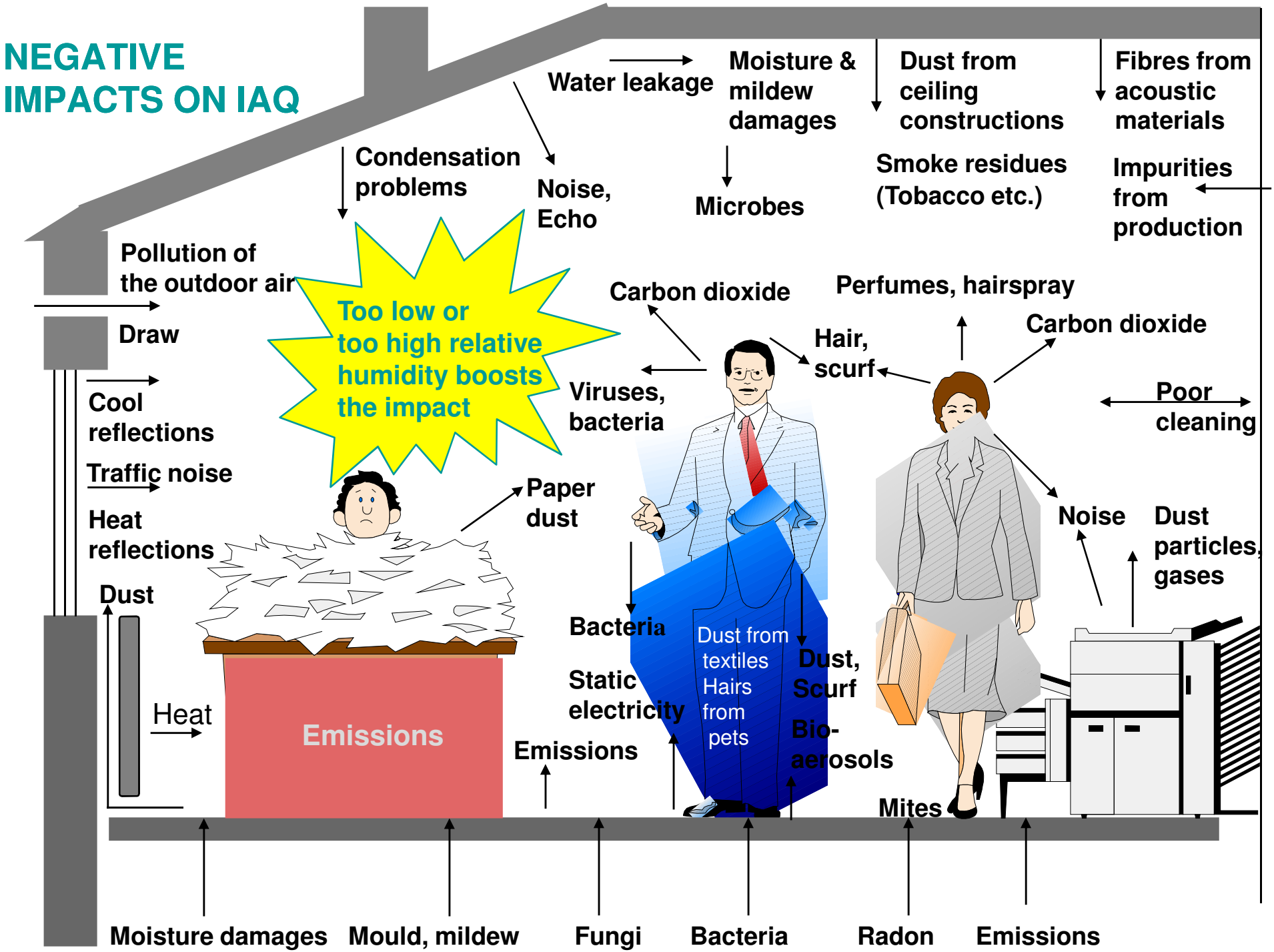
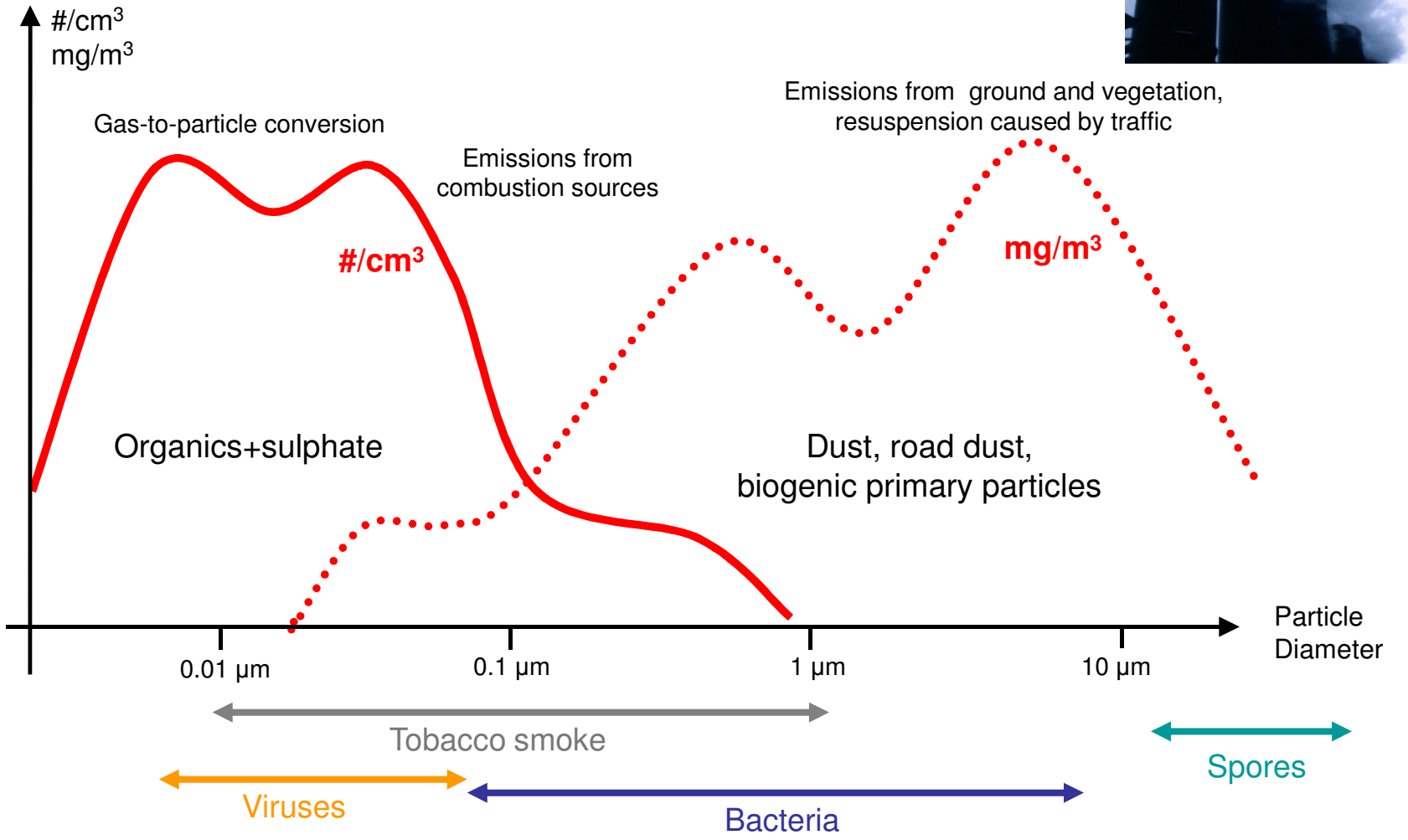
The Lifa Air Concepts

- Methods, products and services for inspecting and cleaning the HVAC ducts

- Superior energy efficient filtration solutions to remove airborne particulate and gaseous impurities


NEGATIVE IMPACTS ON IAQ
Water leakage
Moisture & mildew damages
Dust from ceiling constructions
Fibres from acoustic materials
Condensation problems
Noise, Echo
Microbes
Smoke residues (Tobacco etc.)
Impurities from production
Pollution of the outdoor air
Too low or too high relative humidity boosts the impact
Carbon dioxide
Perfumes, hairspray
Carbon dioxide
Hair, scurf
Draw
Viruses, bacteria
Poor cleaning
Cool reflections
Traffic noise
Paper dust
Heat reflections
Noise
Dust particles, gases
Dust
Bacteria
Dust from textiles Hairs from pets
Dust, Scurf
Static electricity
Bio-aerosols
Heat
Emissions
Emissions
Mites
Moisture damages
Mould, mildew
Fungi
Bacteria
Radon
Emissions

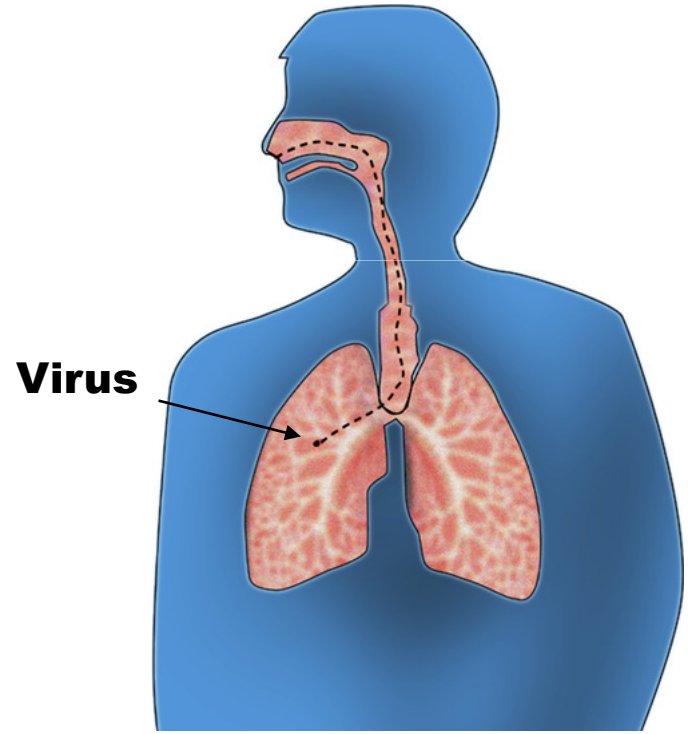
Particle distribution in Urban air



Viruses, biological agents, nerve agents – invisible threats to be stopped

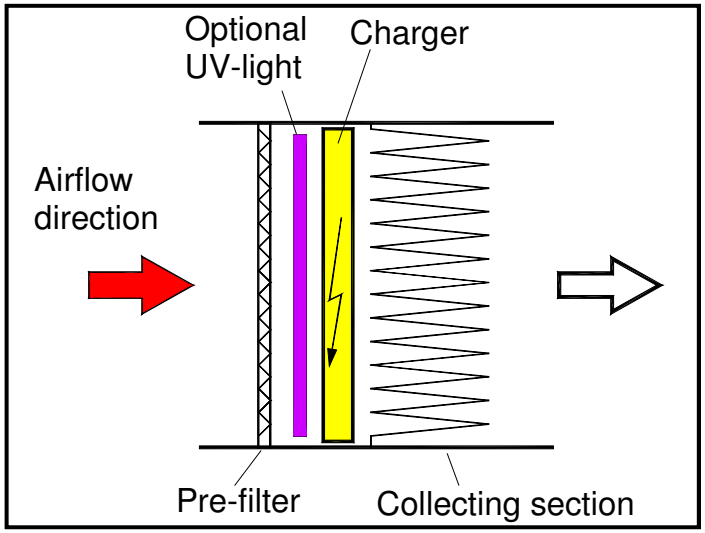
Current air ventilation systems don`t protect people:
Most air filtration solutions are incapable of filtering fine particles or gaseous impurities.

- Fine particles (< 2.5 µm, < 1 µm)
  - Increased risk of cardiac and respiratory diseases
- Ultrafine (< 0.1 µm)
  - Toxicologically ultrafine particles are more active than bigger particles with the same total mass
  - Exceptional ability to penetrate to the pulmonary tissue
  - E.g. diesel particles increase responses to allergens and are likely to cause cancer
- Gas/vapor phase impurities cause health problems and make people feel uncomfortable
  - Ozone
  - VOCs (odors etc.)

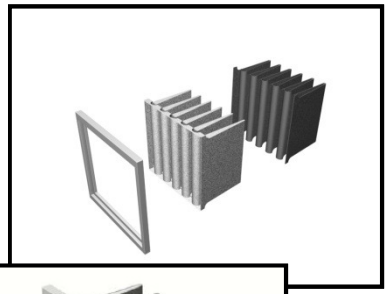


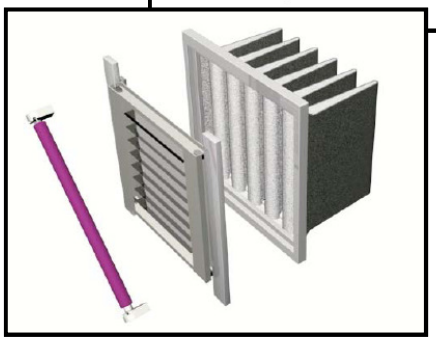
LIFA 3G filtration principle

3G Technology

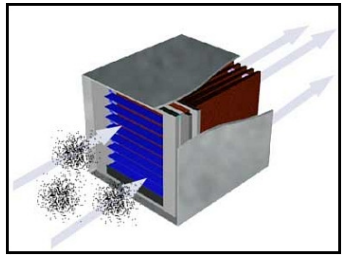


- The particles are charged and collected on a charged filter media
  - Charging is crucial for the filtration of the small particles
  - The unique 3G technology maintains the charge and thus the high filtration efficiency through out the life time of the filter





HEPA class filtration with a pressure drop and life time of a EU7 (F7) class filter + gas filter

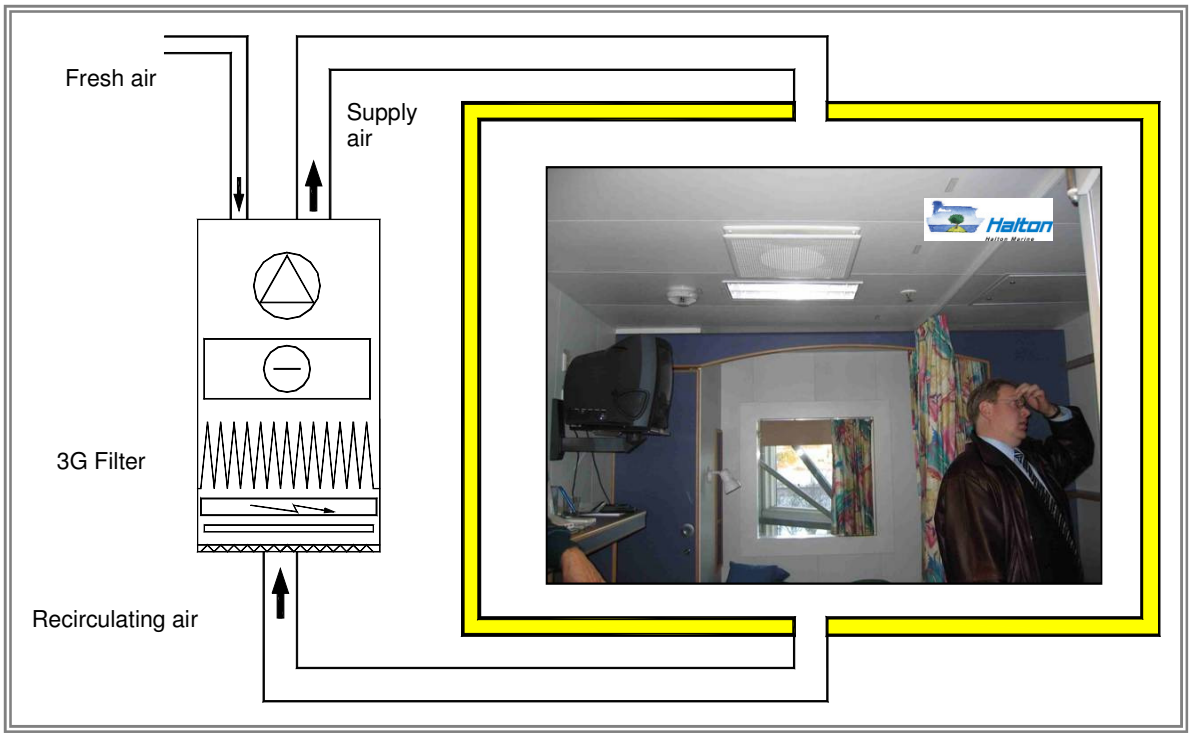


- Low vapor gases like nerve gases, VOC´s and ozone etc. filtrated with integrated gas filter media
- Collected microbes are destroyed with the 3G UV-light

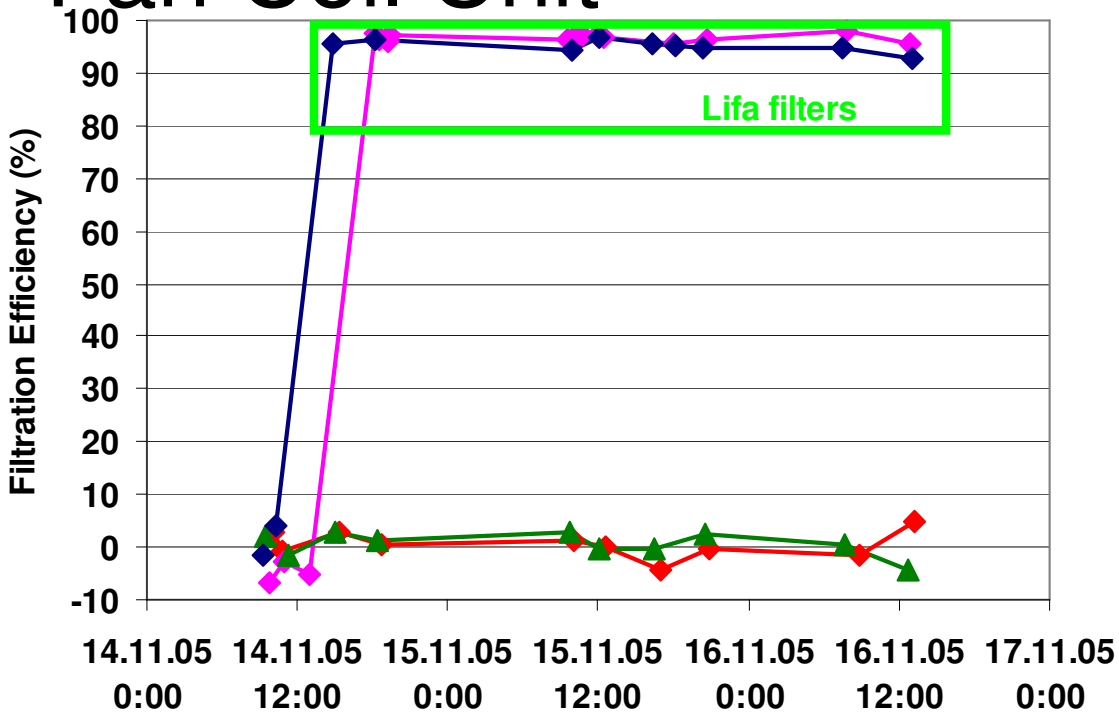
LIFA 3G in a Fan Coil Unit

- Decreases the drawbacks of re-circulation
- Odors emitted by humans; sweat, perfumes, garlic
- Tobacco smoke
- Other small particles;
  - viruses
  - Bacteria

  Customer satisfaction



Case – Fan Coil Unit

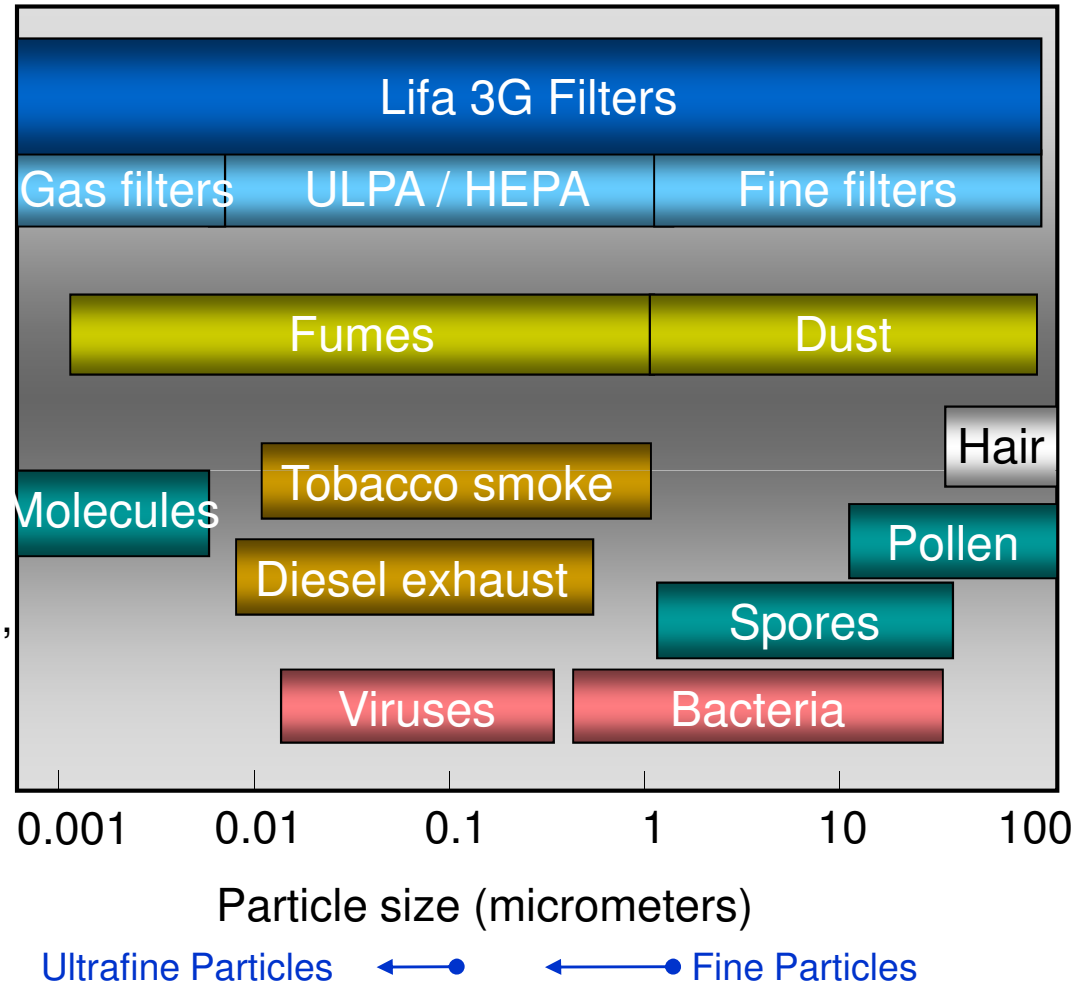


Standard filters in fan coil units do not filter small particles. Above filtration efficiency for 0.3 micro meter particles measured in 4 fan coil units: 2 with standard filters and 2 with Lifa filters.
Filtration effciency improves with increasing particle size: for the standard filters approximately 50% for 5 um and close to 0% for 0.3 um particles

LIFA 3G Filter: superior solution

Effectively prevent the spread of airborne contaminants:

- Nuclear and chemical accidents
- Airborne biological, chemical and nuclear terror attack
- Environmental pollutants
- Airborne Diseases (Swine flu, Bird flu, SARS, Tuberculosis etc)
- **Continuous protection, gives more time to react than sensor (only) based warning systems**
- High efficiency
- High loading capacity, long service life, less waste
- Room/space specific flexible protection
- Low pressure drop → low energy consumption
- Low flow resistance → filter bypass is minimized



How long you can survive?

Thanks for your attention!

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