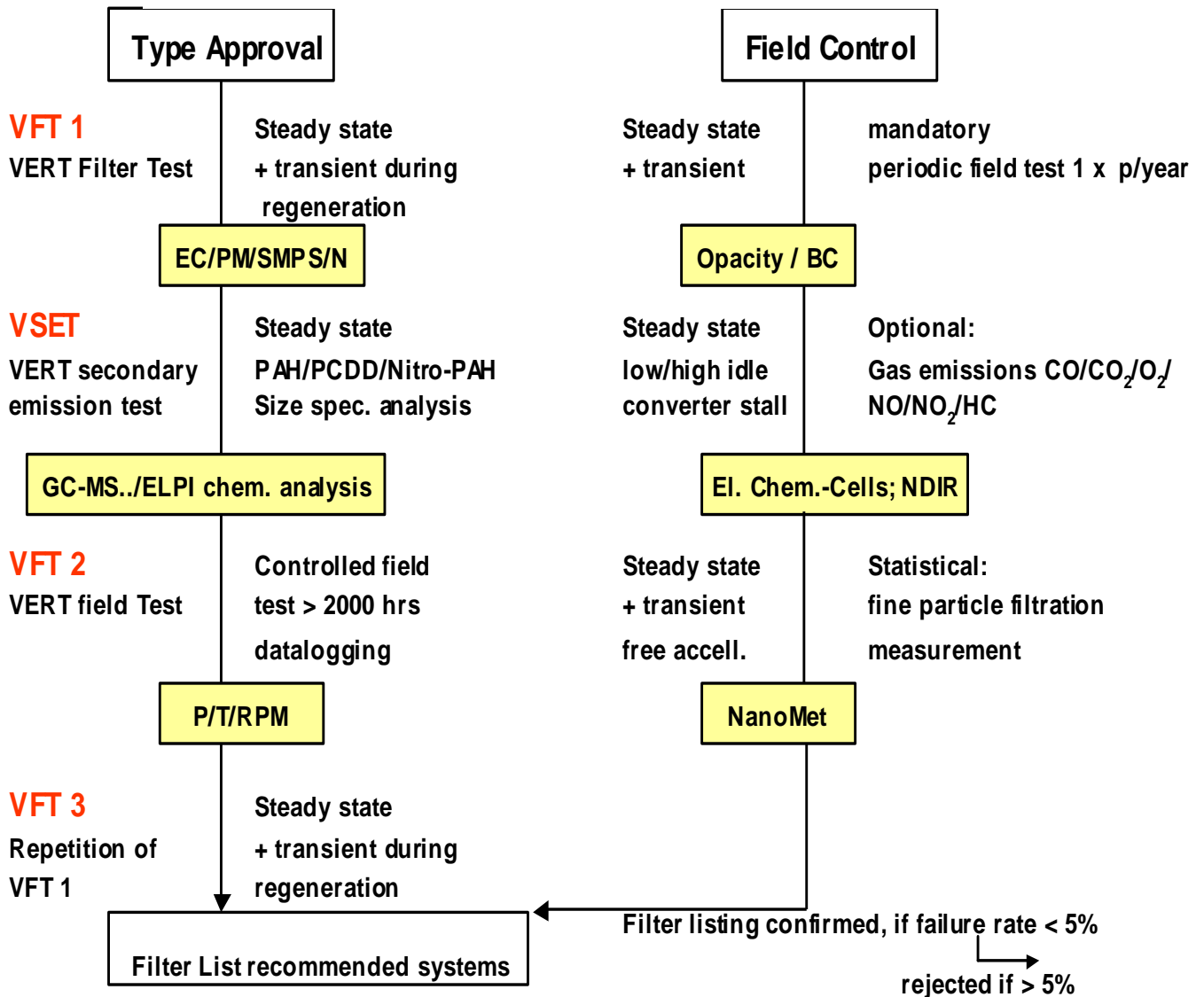


# VERT-verification of particulate trap systems in Switzerland and efforts for worldwide harmonization

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**Swiss Quality-Control of Diesel Particle Filter Systems consists of 3 elements:**

- (a) a quite extensive 4-stage type approval test: one filter per filter technology family must pass all 4 stages successfully  
 --> maximum test effort for a minimum but representative number of test objects
- (b) every single Particle Filter System must be controlled and emission-tested at minimum once per 24 month: function, leakage, back-pressure, opacity  
 --> 100 % field control with minimum test effort
- (c) manufacturer must yearly submit detailed failure statistics to authority and will lose his approval if 5 % failure rate per calendar year and filter are exceeded  
 --> manufacturing responsibility, information on technical failure details

VERT-Particle-Filter Verification

This is based on physical laws of filtration of solid nanoparticles. Modern filters should reach > 99 % filtration efficiency under all operation conditions.

- New
- soot loaded to maximum backpressure ( 200 mbar)
- regenerated
- during regenerations
- after endurance test of 2000 operation hours in a typical application without increasing limited gaseous emissions or creating secondary emissions even at trace concentrations

Worldwide Harmonization of the VERT-Particle Filter Test Protocol

- supports the health effect targets of minimizing solid nanoparticles number concentration
- supports uniform industrial quality of particle traps worldwide .
- minimizes testing efforts
- maximizes information on particles filter properties