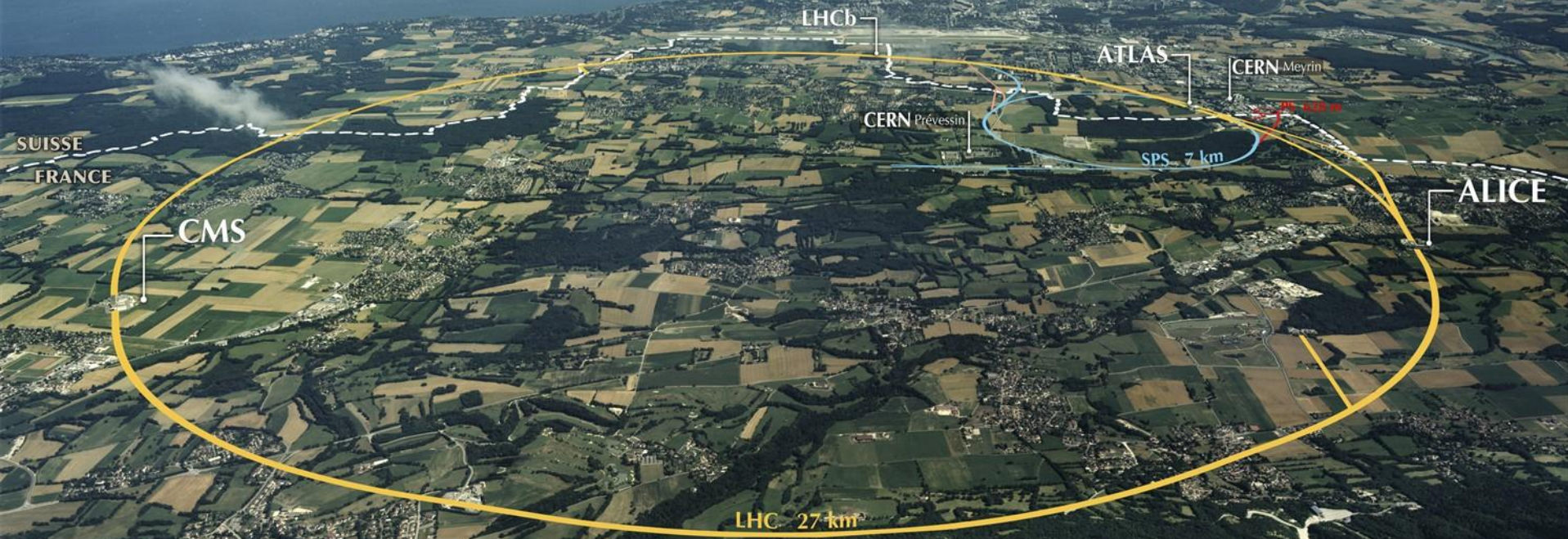


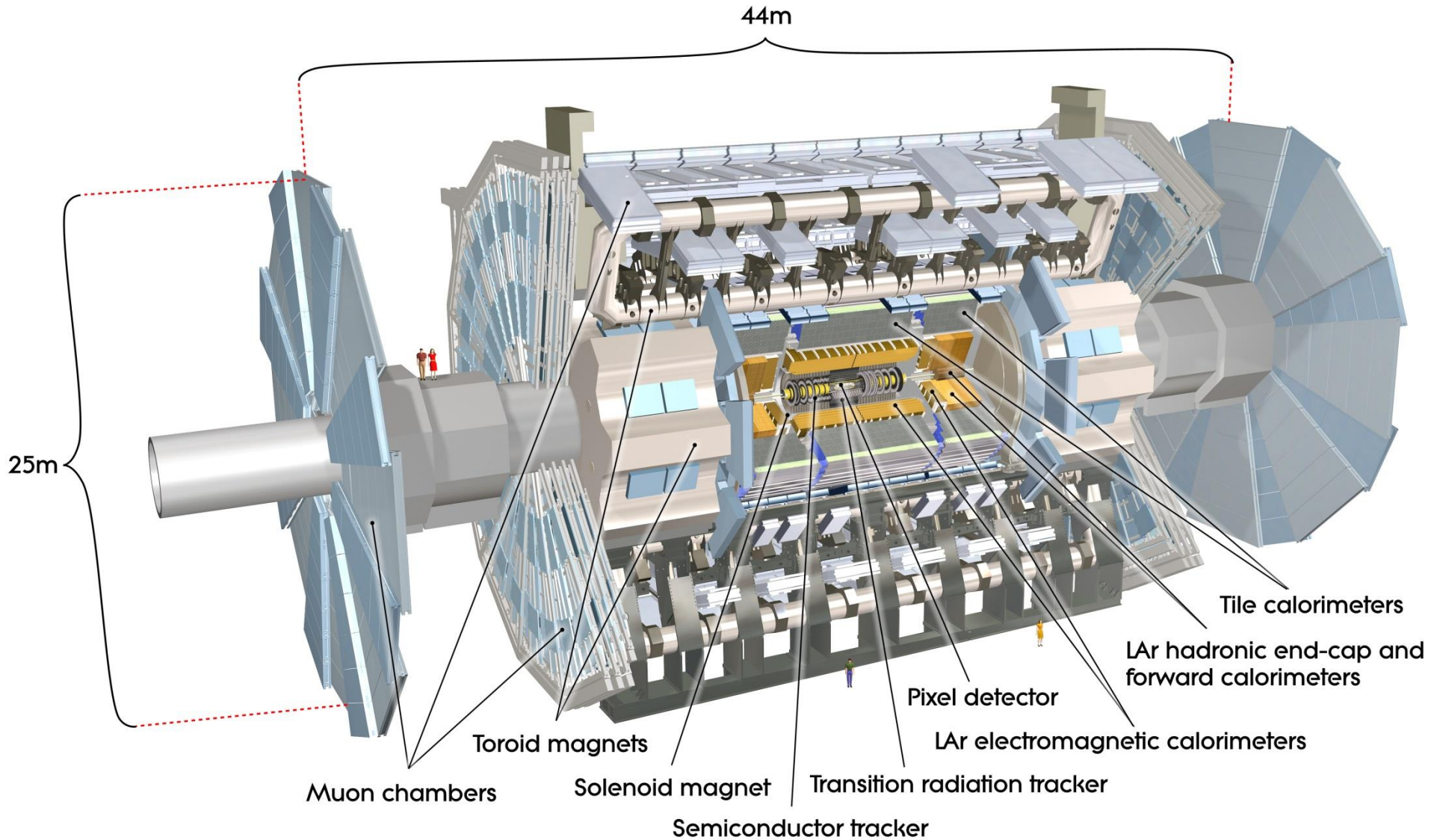
ATLAS & CMS Muon Detector User Case by Endoscopy

Authors: Enrico Pastori

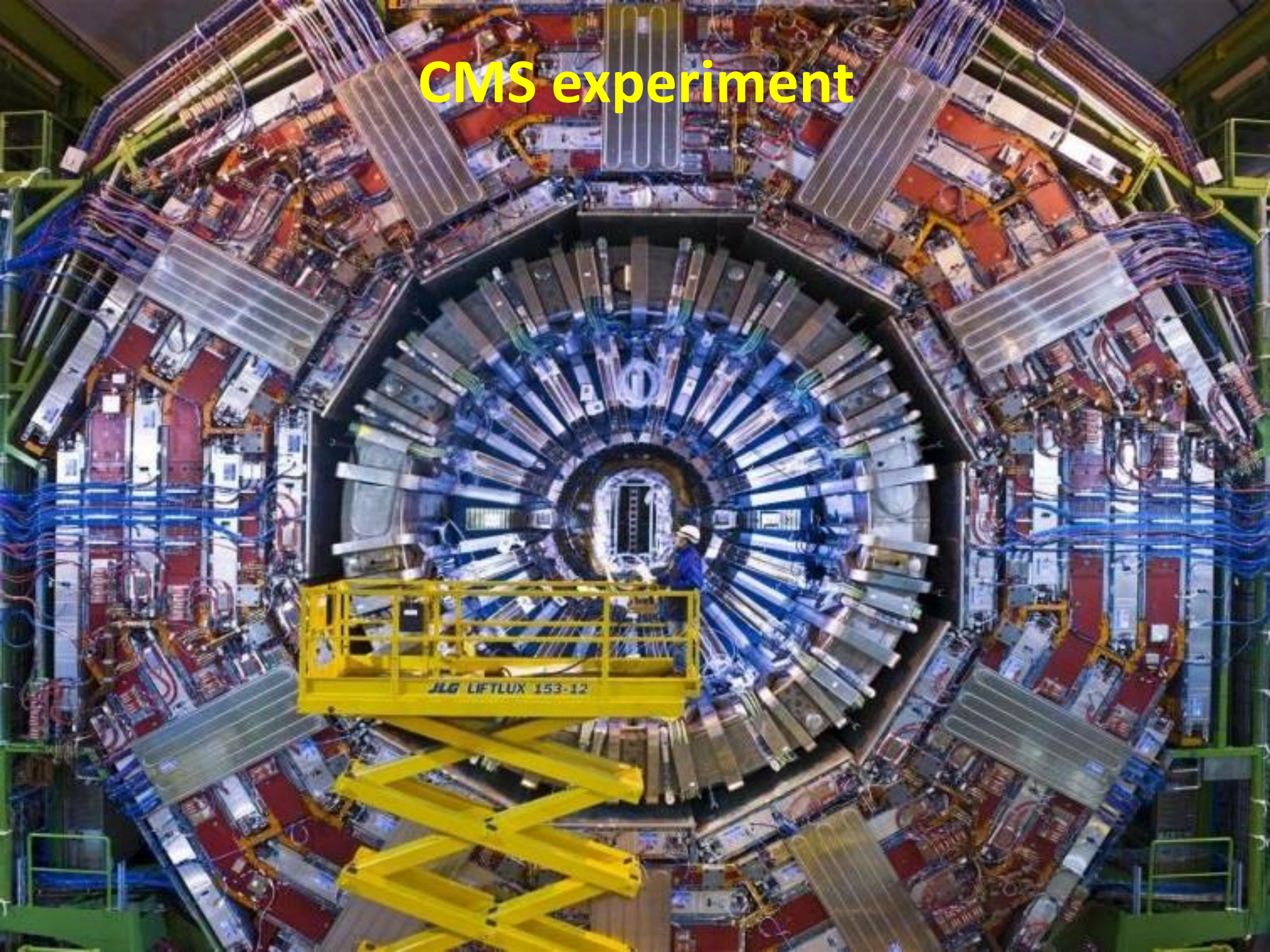
Short introduction: where we are working



ATLAS experiment



CMS experiment



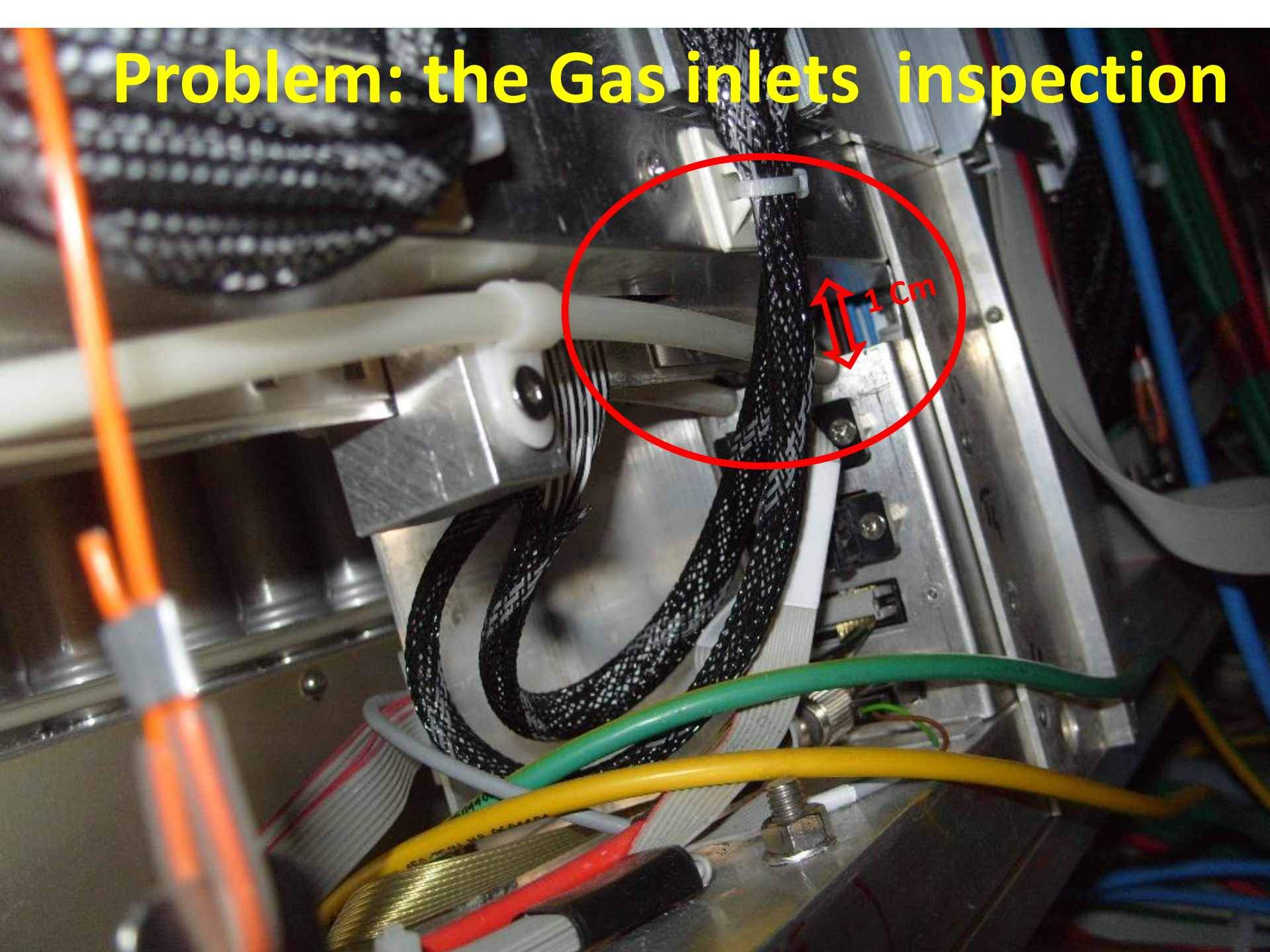
Harsh environment



Work places are often very difficult to reach



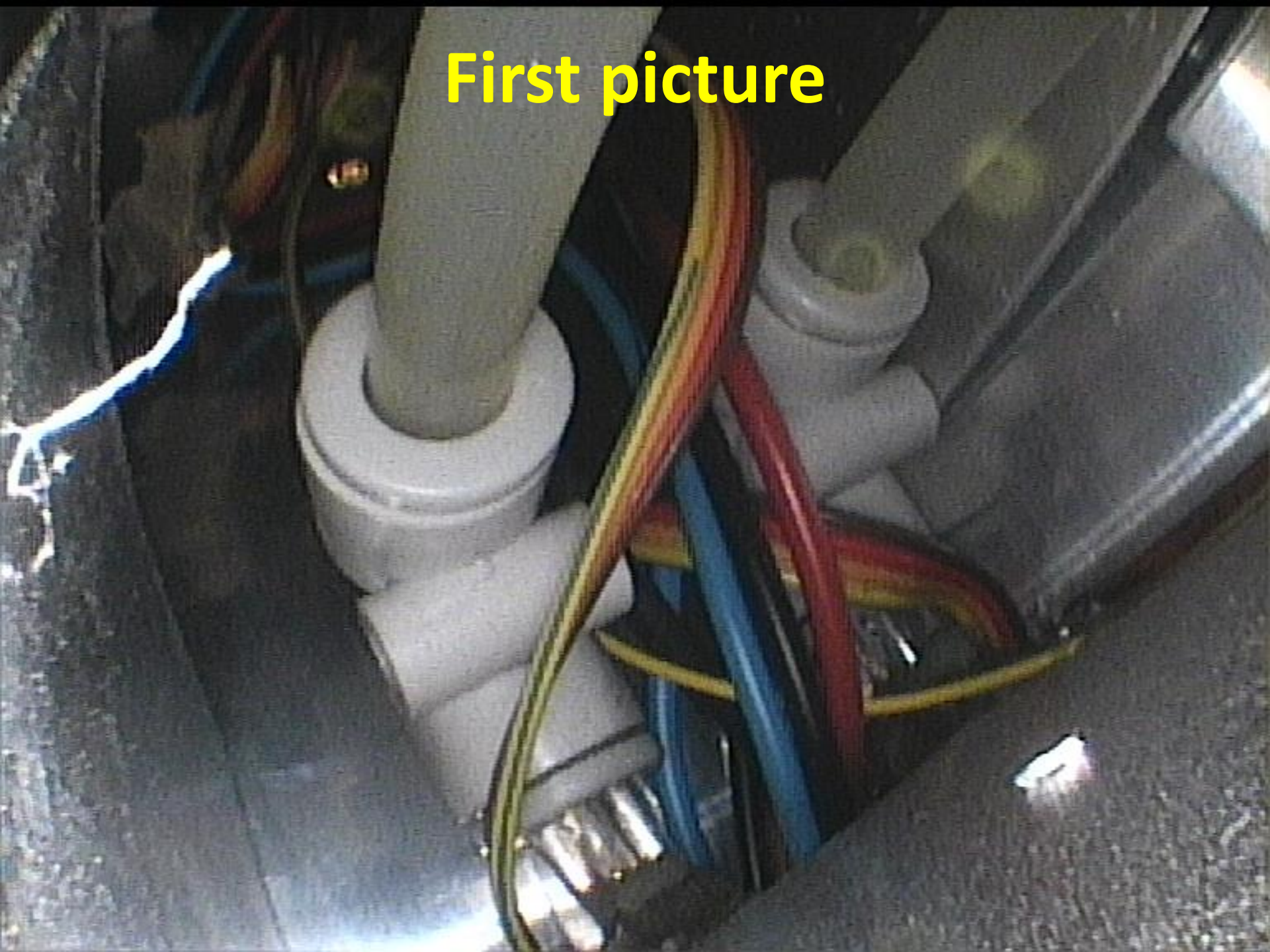
Problem: the Gas inlets inspection



Solution



First picture



CMS chamber inspection



Inspection results



1) Inlet with little crack



2) Inlet with big crack

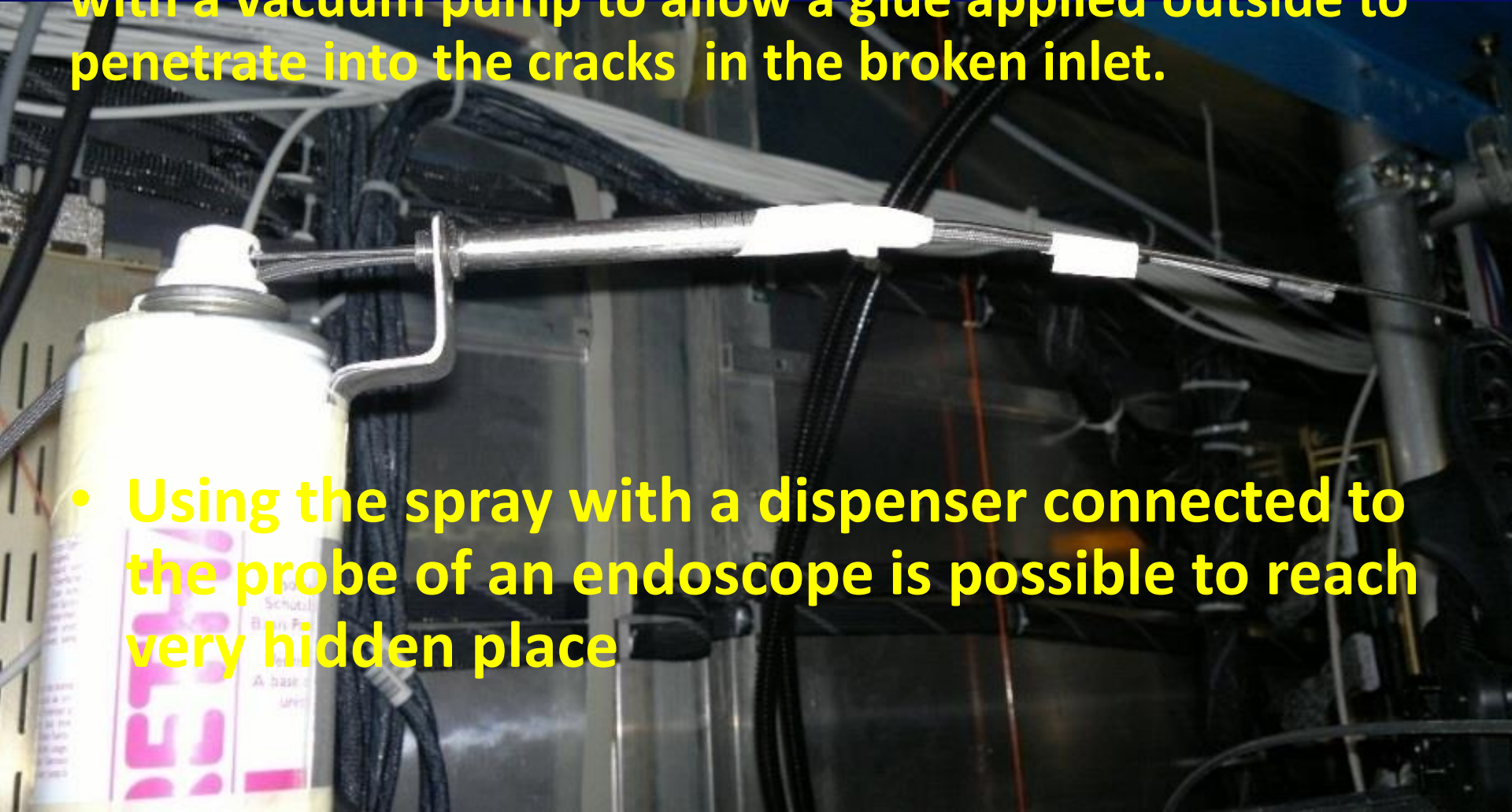


3) Completely broken

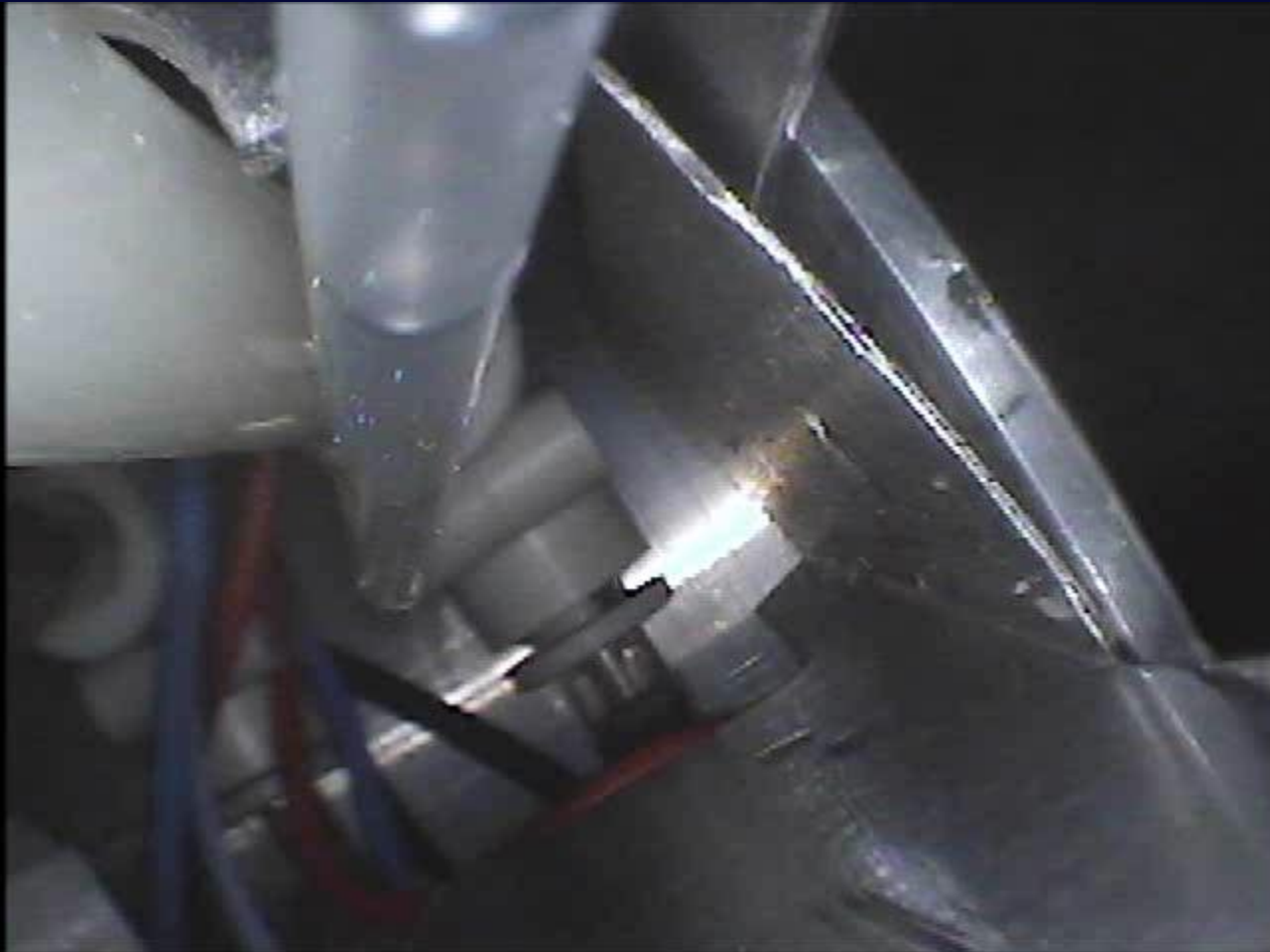
New methods of repair

This consists in to create a small depression inside the gap with a vacuum pump to allow a glue applied outside to penetrate into the cracks in the broken inlet.

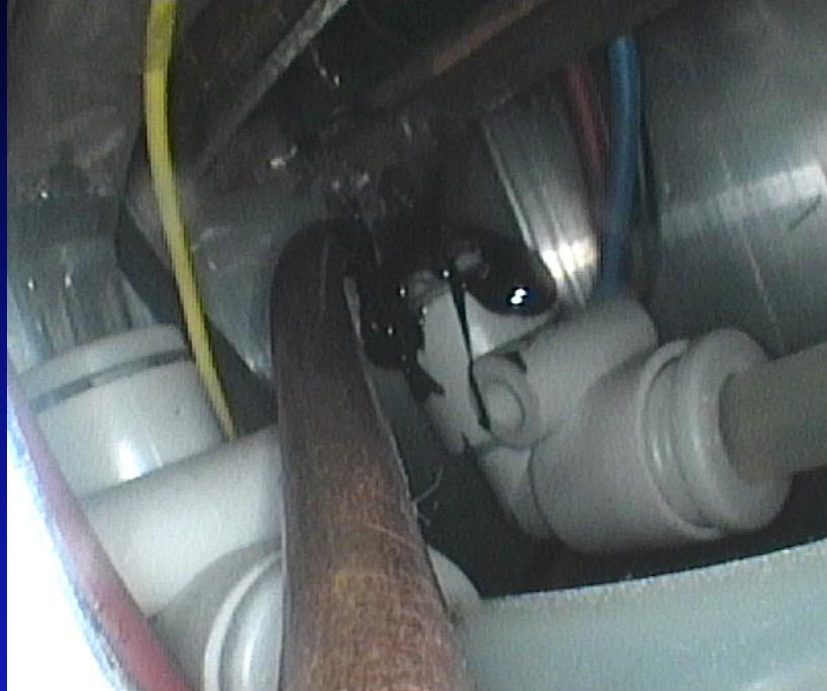
- Using the spray with a dispenser connected to the probe of an endoscope is possible to reach very hidden place



Glue application



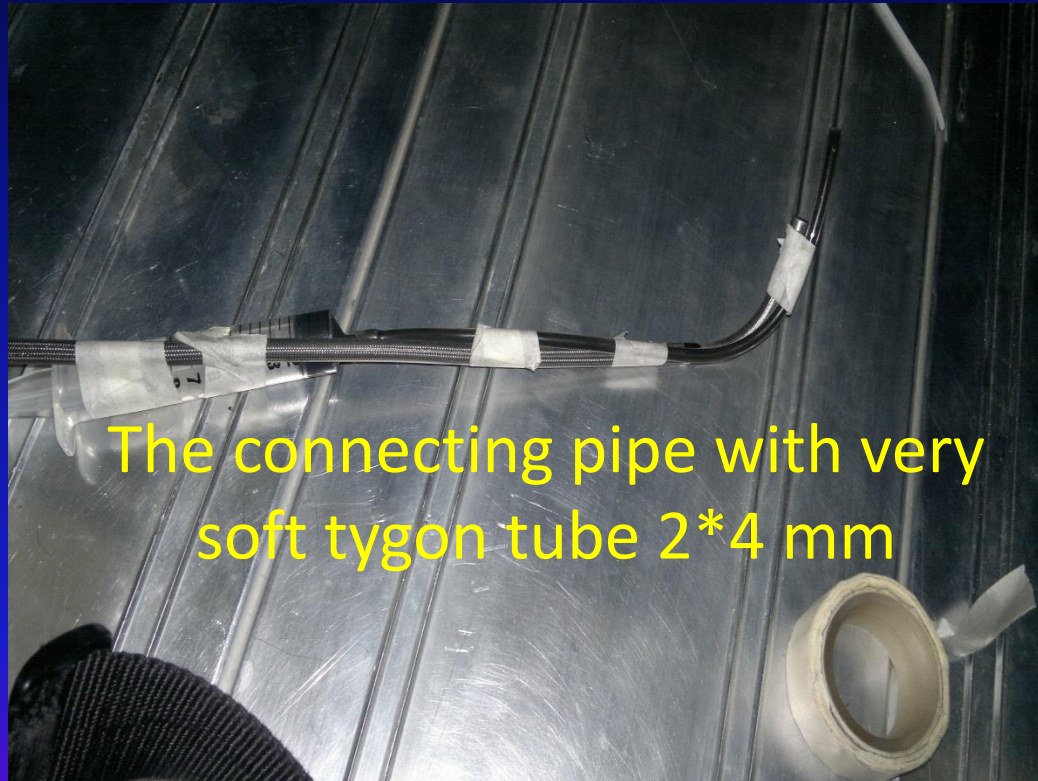
Structural epoxy glue application



DIY dispenser



Possible solution for dispensing tool



The connecting pipe with very soft tygon tube 2*4 mm

The endoscope can drive the dispenser nozzle with the same joystick

Many thanks for your attention.