



EN 14181: A year in the life of an extractive analyser system

This story is from the view of the analyser system, from the day it was created and put together, through installation, commissioning, QAL2 and AST

Hi, my name is Any Gascem. I was born, i.e. assembled and put together, just over a year ago. I was purchased by this very nice man, who had spent months looking around for the right analyser system.

He finally made his decision based on my grandparents having gone through gruelling trials being prodded, poked, heated, frozen and left out on a nasty incinerator for three months with only a couple of visits from a bunch of guys who did a lot more checks. This sacrifice they went through was to make sure their descendants would have an easier life. At the end of the torturous process, they were awarded a coveted MCERTS certificate. They breathed a sigh of relief and spent the rest of their time in a nice warm R&D laboratory until they were finally disassembled at the end of the long and useful life.

Anyway, enough of the sentimentality. What you want to know is what has happened to me over the last year.

All my components were put together in the very nice cabinet – my new home – which is air conditioned. The gas I breathe comes from a horrible incinerator. It is hot, sticky and wet with some very nasty compounds contained within it. When the gas finally gets into my nice little house it has been kept hot then chilled, had the stuffing knocked out of it and is a relatively clean, dry sample.

My little heart (the sample pump) keeps the gas going through my veins and I can then measure NO_x, CO, SO₂ and O₂. When I have finished analysing all the compounds, I do a quick correction and send the results out of the house over high-speed data connection to a big computer mounted elsewhere.

My little house was installed on the plant just over a year ago. It was a harrowing time. I was first loaded onto a truck and then driven for 200 miles over some rough roads. I was then hoisted by a large crane into position. I can tell you I was at my happiest when I felt the Hilty bolts being shot into the concrete base, and felt those lovely nuts being tightened down. I was now in position.

It still took several weeks to connect the heated line and fit the probe before they finally switched me on. The nice people that put me together checked all my parts, gave me a squirt of some clean gas, which I heard them call calibration gas. I could tell at once this was a traceable gas that it must have come from a gas supplier that was UKAS-accredited.

They then left me for a few weeks to settle down, and each week I was visited by my new owner who gave me a little injection of clean dry gas. I overheard him talking to a colleague and they kept calling this QAL3. I then heard that, after several weeks, I had settled down and I was to be put through what they called QAL2. I must say that to keep hearing about this QAL2 sent shivers through my optical bench. They kept saying that, if I didn't pass, I would be sent back – probably broken up or worse. I was dreading the day.

Well, on the day, which turned out to be a week of tests, a man with a clipboard came into the cabinet with one of the nice guys from the factory. The nice guy then started to open me up, brushed me down, checked I was aligned and then gases of various concentrations were squirted into me for what they called a linearity check. I never had to work so hard. The man with the clipboard kept making marks on a piece of paper and making various grunts. At the end he said

that I had passed the functionality test. Oh, boy was I happy I had passed, I could celebrate and they would now leave me alone. Oh, how wrong can you be.

The next day there was a tremendous commotion going on outside my house – shouting, clattering and some bad words were being said. The door of my house was flung open and a bunch of guys dressed in funny suits with hob-nailed boots and yellow jackets came in. The first thing they did was look to see if I was working. The next was to plug a kettle into one of my outlets to make what they called tea. One of them said he had brought the lunch on the way down and flung a Tesco bag down and the contents of sandwiches, crisps and Mars bars spilt over the floor.

It did seem to me that this bunch all knew their stuff – they all had little badges on that made me think they were part of my family because they all had MCERTS logos on their badges. So they had been certified just like me. What I didn't know was the things they would put me through over the next three days. Can you imagine 15 tests for each compound over this period. The poor old incinerator grunted and growled as the feed was changed. So this was the main part of the QAL2 – 15 tests over three days on a varying process.

I can tell you those guys had their work cut out. They were up and down the stack so many times and the weather, oh boy, it rained, the wind howled and at one point it even snowed. I think they were quite envious of me in my nice air conditioned cabinet. After three days, they cleaned up. There was more shouting and clattering before I heard a van door close with muffled shouts of: "At least that's over for a year."

This was now the very worrying time. Had I passed? What was my future? Life settled down and the nice man from the plant started to come back each week giving me shots of gas and carrying out the QAL3. I was quite addicted and looked forward to a little bit of human contact. The QAL2 ordeal began to become a distant memory until one day the nice man from the plant arrived with one of the nice people from the factory, and they and one of those funny men in a yellow jacket came into my little house.

They were huddled together over a large bunch of papers making a lot of funny noises. I heard QAL2, failure, adjustment, servicing and lot of other words that meant nothing to me. I was getting depressed. Whatever next? All of a sudden, they broke up and the nice guy from the factory came at me with a screwdriver. Was this the end?

No, all he did was adjust my calibration function; this was to line me up with the results from the QAL2 tests. They then left and the man with the yellow coat said in parting: "I will see you in a year's time." That was it: the end of the QAL2. It was not so bad.

All the people involved had, after all, wanted me to continue and to give good, stable results. It looked like they had all worked together as a team. Each party knowing what the others were doing and when.

Still, every week the nice man comes in to give me my little fix, QAL3 again, and goes away.



Two weeks ago the yellow jackets came back, lots of noise, more sandwiches from Tesco only this time they spent a day with me. This was the AST (annual surveillance test). All went well. They had seen I had earned my keep over the last year.

A couple of days ago a new bunch of people turned up in my house. New words were being said, stern faces on some of them, beads of sweat on the brow of the nice man from the plant. They kept talking about OMA and scoring. This was confusing to me as one of my brothers had been shipped to South Africa, and OMA over there means grandmother. So did this mean the guy's grandmother had scored quite highly? It was then one of the stern faces turned round and I saw his badge: The Environment Agency. They weren't talking about the guy's grandmother but about Operator Monitoring Assessment (OMA) and apparently we had scored highly and everyone started to look happy. Coffee was mentioned and they all left.

Life is great in the MCERTS world.