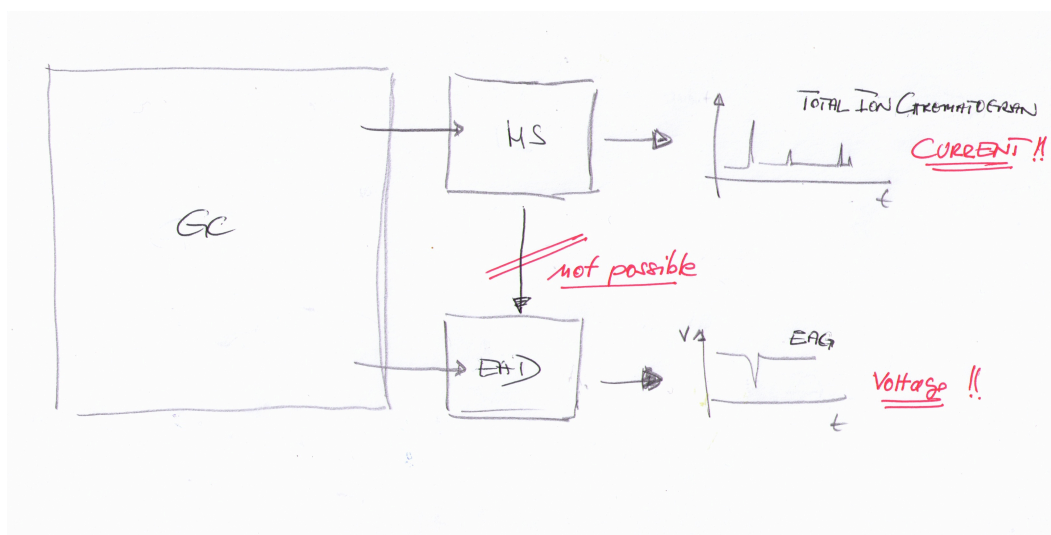


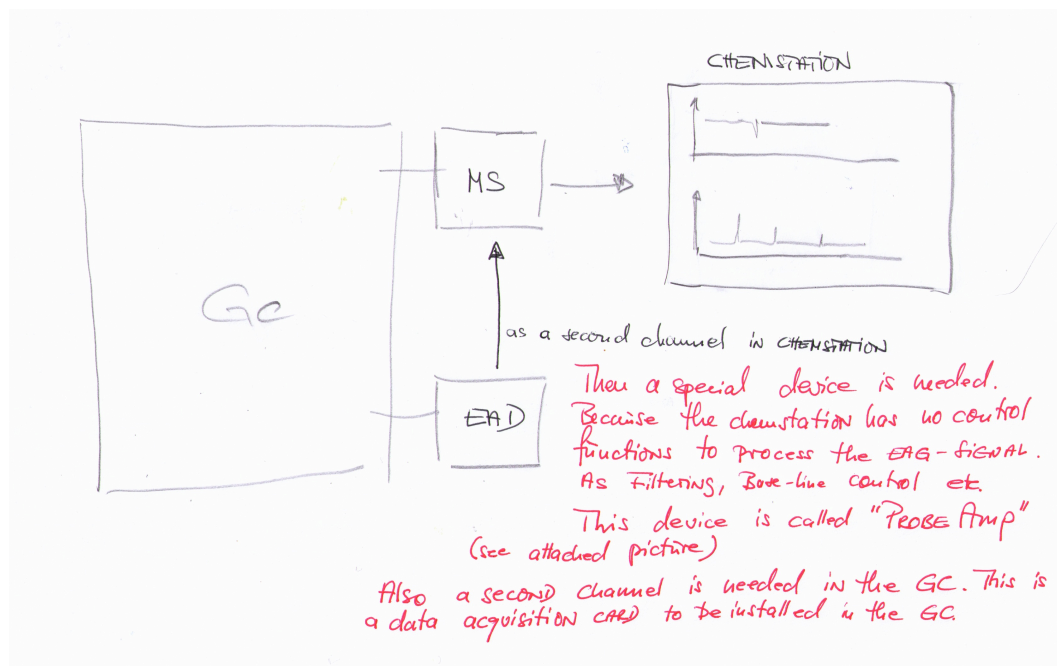
To connect a GC-MS system to an EAD recording unit is not so easy.

To use the EAD function in addition to GC-MS, meaning having antenna recordings simultaneously to the Total Ion Chromatogram is not so easy to get.

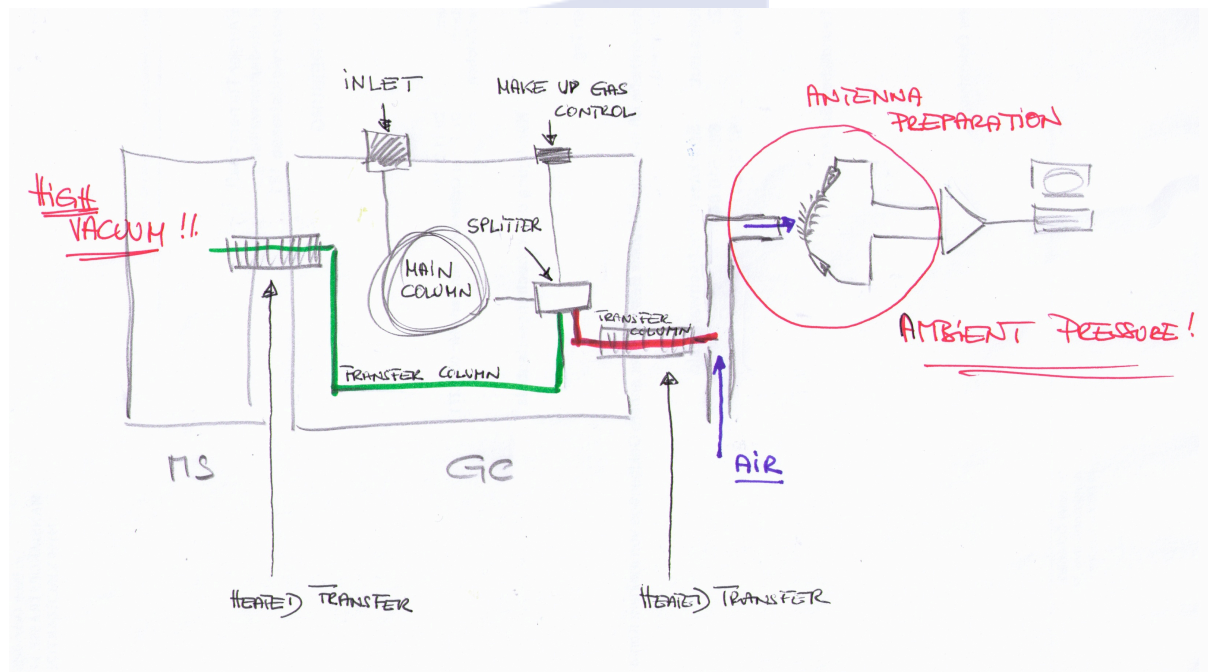
One reason is that the signal of the MS cannot be taken out of the MS to feed it into the SYNTECH system. The MS Signal is an electrical current and to split such a signal (one part to the SYNTECH amplifier and the other part to create the MS Signal) would mean to split the amplitude of the MS-signal. And thus one would see only "half" of the information.



But it might be possible to feed the signal from the insect antenna into a second unused data acquisition channel of the GC-MS System. (I have done such configurations with Agilent systems) The problem with such a solution is, that GC data recording systems are made for technical signals and not for signals from biological sources. Biological systems produce also a lot of noise, fluctuating base line and so. The SYNTECH IDAC system can filter this but GC systems can't or only to a certain stage because they are made for technical signals. Syntech has developed a little device to convert the signal from a SYNTECH probe in a way that it can be recorded with such a GC data acquisition system. This is the ProbeAmp.



Another big problem is that a very special splitter is needed. The thing is that the MS works under high vacuum but the EAG preparation is under normal ambient air pressure. So in the GC a special splitter needs to be installed to handle this. (See the following schema). Because you want to have the reaction of the antenna at the same time as the retention time of a compound in the Total Ion Chromatogram. Such splitter arrangements are not so easy to install and need a lot of care and maintenance. It becomes even more complicated if a make up gas will be introduced into the splitter. Which is recommended to increase the sensitivity of the antenna.



The best option would be to have a separate chromatographic system installed in the GC. Meaning a separate injector, column and FID. This then could be equipped with a normal Splitter. You then would have two systems in the GC.



You also have to consider that a GCMS-EAD system needs space on the right side of the GC as the left side is occupied by the MS.

Normally a GC-EAD systems uses the hole in the oven wall of the GC that is prefabricated to attach a MS. So if you want to use a GC-MS system the heated transfer line of the EAD system needs to be installed on the other side. In some GC that can be problematic as there is very often the electronics and no space left to install the EAD transfer line which also gets hot... I know that the actual AGILENT models do have enough space to do that. The next thing is, that the normal length (30cm) of the heated transfer line may be too short then. Then you need the 50cm long version.

