Historical records of changes in atmospheric column characteristics are highly uncertain reflecting primarily on the inadequacy of the historical observations for the specific purpose of climate monitoring. For over a decade the climate science community have been advocating a reference network to ensure the future record is adequate. A reference quality upper air network was called for in the GCOS Implementation Plan.

Progress towards the ‘GRUAN’ network is outlined here along with contact points for further information. The network currently consists of fifteen sites. First data will flow in early 2011. The key differential to other networks is that each observation will come with an associated error estimate which will be tied through an unbroken chain to either absolute or relative standards. An example for radiosonde data will be shown.

Future steps to advance to a stable network assessing comprehensively the column characteristics along with likely science applications will be briefly outlined.

Further information on the network is available from www.gruan.org and the associated blog, where comment is welcome at http://gruan.wordpress.com/.