The progress in trend studies in the upper atmosphere and ionosphere in the last 2-4 years was significant. The global scenario of trends was refined and some problems were removed and/or explained. Ground-based observations of noctilucent clouds and satellite-based observations of polar mesospheric clouds provide the same trend within trend determination error bars. Trends in foF2 are no more under dominant geomagnetic control as they probably were in the past; now the greenhouse gas control dominates. Model computations shed light on the complex behavior of trends in foF2 and hmF2. The role of non-greenhouse trend drivers has been established much better than before, particularly the role of stratospheric ozone changes. These non-greenhouse gas trend drivers are responsible for non-constant trends; due to their forcing we cannot expect stable long-term trends, they will behave in a way to be described by piecewise linear trends, not monotonous linear trends. More detailed information will be provided in presentation.