We present a new compilation of models of the magnetic field at the Earth’s surface for the interval 1590-2010. Our compilation is based on the well-known worldwide models and on not so well-known IZMIRAN models. All of those models are heavily using historical records, while some of them are making use of archeomagnetic data. In order to construct the maximally plausible compilation we use our original estimation of harmonic magneto-convective sources of the main geomagnetic field in the Earth's core. Estimation is based on time and radius dependent system resulting from a reduced harmonic expansion of the complete geodynamo equations. The sources of the observed main geomagnetic field are expressed through a simplified geodynamo solution with the largest scale that is still successfully modelling the geomagnetic field from the historical records and archeomagnetic estimations. Temporal dynamics of derived sources define the individual space-time features of generation or suppression of each Gaussian component of the geomagnetic field. Using our compilation we roughly determine the large-scale harmonic sources of the geomagnetic dipole and refine the estimate of the electric conductivity in the Earth's core.