Variations of the antenna primary beam pattern as a function of time, frequency and polarization form one of the dominant direction-dependent effects at most radio frequency bands. These gains may also vary from antenna to antenna. The A-Projection algorithm, published earlier (Bhatnagar S. , Cornwell T.J., Golap K. & Uson J.M., 2008, A&A, 487, 419), accounts for the effects of the narrow-band antenna forward gain in full polarization. Partly funded by the ALBiUS project, the Wide-Band A-Projection algorithm was developed which also account for the effects of wide bandwidth and show that the algorithm can simultaneous correct for the time, frequency and polarization dependence of the wide band primary beam. The algorithm also naturally interfaces with existing image-plane algorithms for similar time-, frequency- and polarization-dependent variations of the sky brightness distribution. In particular the algorithm can combine wide-band A-Projection and the Multi-Term Multi-Frequency Synthesis (MTMFS) for simultaneous mapping of sky brightness and spectral-index distribution in full polarization and for wide field of view. As part of the investigation, alternatives to wide-band A-Projection algorithm were explored for similar wide-band wide-field imaging capability. Limitations of these alternatives were identified making it clear that the wide-band A-Projection in combination with MTMFS offers an optimal solution in terms of imaging performance and algorithm complexity. This work is described in detail in a paper submitted for peer-reviewed publication. The algorithms will be available in the CASA data reduction package within the year.