The significance of heart disease has motivated the application of state of the art clinical imaging techniques to aid diagnosis and clinical planning. However to exploit the full value of such imaging technologies, and the combined information content they produce, requires the ability to integrate multiple types of functional data into a consistent framework. An exciting and highly promising strategy for underpinning this integration is the assimilation of multiple image sets into personalised and biophysically consistent mathematical models. The application of these models requires the development of a range of automated meshing approaches to accommodate the underlying physics and physiology of the cardiac system. This in turn provides the ability to capture the multi-factorial cause and effect relationships that link the underlying pathophysiological mechanisms. Applying this approach I will present the meshing related issues associated with the development and application of a computational cardiac framework representing the cardiac electrical, mechanical and fluid systems and related functions.