The world needs reliable ways of synchronisation. We can focus on the problem of synchronising two pieces of data, where one side contains more information. This is studied by the theory of bidirectional transformations.

We have developed a programming language BiGUL, in which every program denotes a well-behaved bidirectional transformation. BiGUL consists of a set of small, carefully designed bidirectional components, whose well-behavedness has been formally verified, achieving high reliability.

The components are then used as building blocks of various bidirectional applications.