A key point in the hydraulic engineering field is to have an effective and reliable tool for the study and design of sewer systems or canal networks. The main subject of that report has been to develop a software application, called NAUNET, which has the capacity to solve gradually varied flows in open channel networks or with an node energy limitation up to the ground level.

This report describes the hydraulic problems approach and their resolution. It is also included the description of the software development and the steps applied in the graphical interface setting up.

NAUNET has a strong educational approach so it comes with a few solved examples which show up the flow network complexity but which help at the same time the understanding of those process.

Some of those examples are related with real facilities and show that NAUNET is also an application that could be used in professional design and calculation of canal networks and sewer systems.