INTRODUCTION

Underwater (UW) acoustic networks are generally formed by acoustically connected ocean bottom sensor nodes, autonomous UW vehicles, and surface stations that serve as gateways and provide radio communication links to on-shore stations. UW acoustic sensor networks consist of sensors and vehicles deployed underwater and networked via acoustic links to perform collaborative monitoring tasks. However, the acoustic channels impose many constraints that affect the design of UW communication systems. These are characterized by a path loss that depends on both the transmission distance and the signal frequency. The signal frequency determines the absorption loss, which increases with distance as well, eventually imposing a limit on the available bandwidth.