**Introduction**

**Goal**
- To investigate the provision of a Protocol based on a transactional model.
- To avoid overhead incurred through connection management, such as connection establishment and connection termination.
- To minimize the state information that is kept at the communication endpoints.
- To provide a better performance in terms of overall throughput to a number of applications.

**Background**
- **MANETs** (Mobile Ad hoc Networks):
  - a. Self-configuring network of mobile nodes, connected by wireless links.
  - b. Topology changes rapidly and unpredictably, routing path breaks frequently, which provides a state routing information.
- **TCP** (Transmission Control Protocol):
  - b. Routing reestablishment process takes time to obtain a new route to the end.
  - c. Performance degrades rapidly when increasing the routing length.

**State of art**
- **VMTP** (Versatile Message Transaction Protocol) provides request-response message model which supports reliable and sequenced transactions.
- **XTP** (Xpress Transport Protocol) provides Selective Retransmission algorithm to deal with loss recovery. The receiver transmits the list of missing packets to the sender, who is able to resend the data as needed.
- **BP** (Bundle Protocol) defines a series of data blocks as a bundle. Bundles are routed in a store and forward manner, accessing the network with high level service guarantees.

**Design**
- In MANETs, a sender S sends a request to destination D; and when D receives the request, it processes the request and then sends a response to S.
- The sequence of Request and Response Protocol procedures shown in the graph below:

**Implementation**

**Network Simulator**
- a. Discrete event driven network simulator
- b. Written in C++ and Otcl.
- c. Create a new simulator object through Otcl.
- d. The object mirrored the class hierarchy.
- e. NS produces text-based output files that contain details of simulation data, which can be displayed in a graph by NM (Network Animator).

**Packets transmission between two nodes**

**Evaluation**

- Simple-Packet Handshaking
  a. With a simple two-hand shaking, a sender can reliably set up a connection between two nodes. Once the connection established, the data packets load to the receiver.
  b. Unlike TCP, after the data successfully received, only the receiver sent an acknowledgement to terminate the connection.
- Flow Control
  a. The two-hand shaking also manages the flow control. RRP only supports sequence connection. After two-hand shaking, it will confirm whether the current node got the permission to send the request.
- Error Control
  a. Like TCP, must detect the error and set retransmission. Using same checksum with TCP.
- Store and Forwarding
  a. Adopt this manner from BP(Bundle Protocol). When the transmission breaks, it does not retransmit from the source node; instead, it can gain the original packets from the present node’s storage.
  b. Timers are used to monitor the transmission control.
  a. A response has not been received before timeout, a retransmission will start.

**Conclusion**

- The Request/Response Protocol has adopted “store-forward manner” from the BP protocol and that specially works for Mobile Ad hoc Networks.
- In the RRP protocol, a sender must process a two-hand shaking before it sends the request packets. And it needs to receive an acknowledgement before terminating the connection.
- Every intermediate node needs to provide an available space to replicate the data packets. When a transmission fails, it does not retransmit from the source node. Instead, the present node will get the packets from the storage and send to the next node towards the destination.