Incorporating Secondary Sources

According to Wagner (et. al 2006), in the selection of suitable actuators, consideration is currently being given to a wide variety of competing concepts. This reflects the fact that double clutch transmissions are still relatively new in the market and have yet to go through a process of maturing and development (pg.1)

In their 2006 study, Wagner (et. al 2006) found that In order to combine the best characteristics of both manual and stepped automatic transmissions into a concept for automation, the actuators for the double clutch transmission must fulfil the following technical requirements:

1. Function

• Highly dynamic positioning

• Precise controllability

• Defined failure mode behavior

2. Operating life

• Vehicle life 240 000 km and over

• Free maintenance

• Robust under all environmental conditions (temperature, vibration, contamination)

3. Integration and packaging

• Smallest possible packaging with highest possible integration into the transmission

• Compact components

• Simple assembly processes

4. Energy requirements

• Lowest possible actuator energy requirements and thus lowest possible additional fuel consumption

5. Additional requirements to form a hybrid system

• Energy source independent of the internal combustion engine (pg.1)

Wagner is showing in this study that the DCT is fairly new technology to manufacture. The actuator technology is very complex and needs to take function, operating life, energy requirement, and much more into account for deign purposes.