CHAPTER 3

OBJECTIVES

3.1 INTRODUCTION

Development of headlamps for passenger cars so far benefited from computer aided technologies for product development activities. But, the suppliers of headlamp still feel the inadequacy of computer aided systems in coping with the increasing pressure from the OEMs to produce quality headlamps in a shorter time. This requires the suppliers of headlamp to implement new technologies to practise collaborative and concurrent product development process. Most of the time, the headlamp suppliers find inadequacies of resources. This is often the case of small and medium enterprises (SMEs).

3.2 OBJECTIVES

From the literature review, as discussed in previous section, it is learnt that there is a shortage of research work supporting the development of headlamps that is seamlessly connected with the design of the exterior of cars. Also, it is noted that this knowledge of headlamp development is to be managed by a suitable application of IT for collaboration and information management. That is, a comprehensive method to provide a methodology for creating, updating and deleting information as needed by several phases of product lifecycle for several users (OEMs, supplier, customer) is identified as a gap in the knowledge available in the field of headlamp development. Thus
a systematic study using integrated and coherent use of CAD and IT technologies is taken up with the following objectives. The objectives of this study are

1. To develop a methodology for the design of lens of headlamp, that can provide a high level of aesthetics with the exteriors of the vehicle and refine this method with provision for surface feature, rib feature and material feature. This is needed to provide the necessary lifecycle functions to the components.

2. To design parabolic reflectors for the specific front fenders of cars as per the standards of illumination.

3. To create a few profiles for lens and reflector for the existing exteriors of vehicles available in literature and verify the validity of the method.

4. To provide a parametric relationship among the major components of headlamp so that these components can be created in a CAD platform when the lens and reflector are designed.

5. To develop a framework that can support concept phase, design phase and manufacturing phase of headlamp using multiple view product modelling.

6. To propose a suitable solution for classifying the components in the design phase as ideal and non-ideal parts, for an early decision making on manufacturing methods.

7. To develop a product data management framework that can be further developed into a PDM system for the supplier of headlamps that supports their CAD practices.

Methodology of this work is presented in the next chapter.