

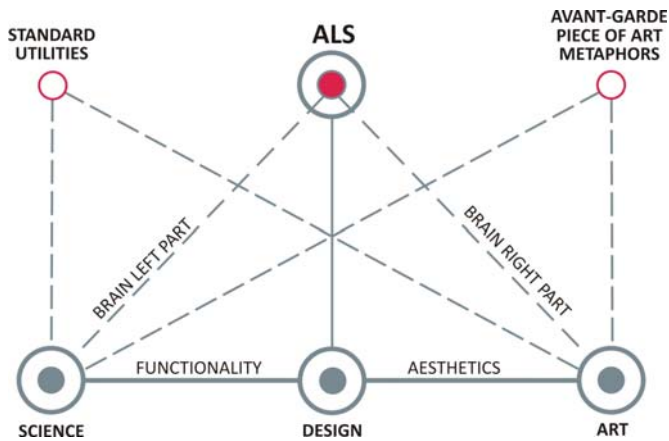


Fig.2. Location and behavior of the ALS concept to established cultural trends.

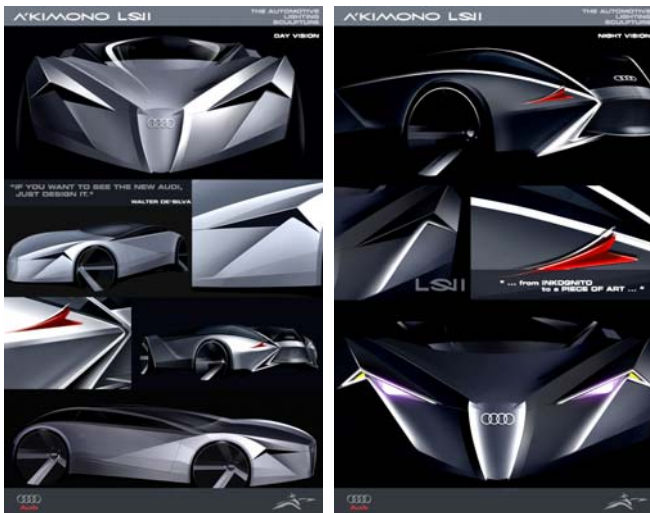


Fig.3. Audi A'KIMONO LS2.0. Exterior - day and night vision – light sculpture on four wheels.

3. The place of the ALS concept beyond the process of building a real car model

The main design stages of a real car model process are as it follows: product planning, brief description, "brainstorming", theme (style) directions, three-dimensional modeling, design evaluation, program management, testing the model release. The place of the *ALS concept* beyond the process of building a real car model is represented in Figure 4.

The practical application of the *Automotive Lighting Sculpture concept* can be seen in several dimensions.

Firstly, this is an individual creative approach that helps to build strong, fascinating and memorable characters on four wheels, an essential starting point in the transportation design process – the *ALS concept* is an impulse of creative inspiration („импул за творческо вдъхновение“).

Secondly, the *ALS concept* represents an opportunity for the realization of a conceptual model that can affect the development of certain brand identity of many manufacturer of

vehicles as well as it can affects the development of other areas of contemporary culture.

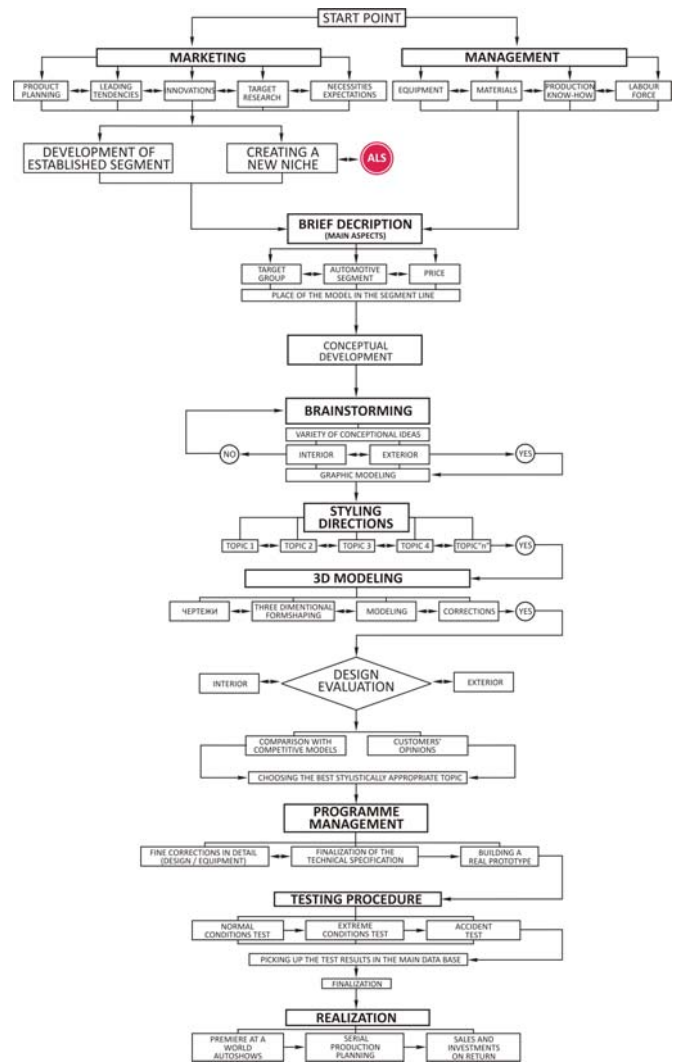


Fig.4. Design process of a real vehicle. The place of the Automotive Lighting Sculpture concept

Thirdly, the *ALS concept* represents an opportunity for its implementation as a single ("boutique") model, produced in one or a limited number (limited edition), depending on the marketing strategy of the manufacturer, without excluding the possibility a certain conceptual solution to be launched as a model for mass production.

Lastly the *ALS concept* may influence the worldview of a person (group) and its (their) future development - as an example of the contemporary associative and creative thinking (a nonlinear model of open system), allowing it to be interpreted in other situations, depending on certain circumstances and necessities. In this connection it is presented a prognosis towards the implementation of the *ALS concept* in real conditions (Fig. 5).

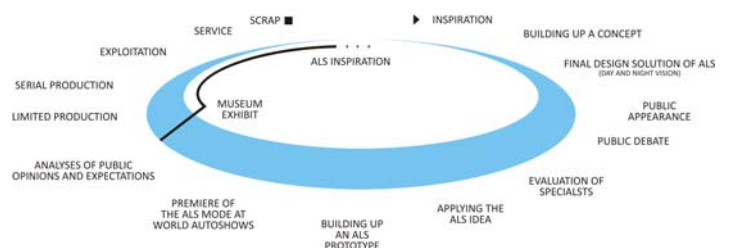


Fig.5. prognosis towards the implementation of the ALS concept in real conditions

4. Generalized model for the design of the ALS concept

The ALS strategy includes three major aspects of design - marketing, technical and styling parameters.

The Marketing unit covers the development of leading global trends and innovations in all areas and levels, the emerging public and consumer interests and demands in response to recent market developments, objective analyzes (observations) of the interaction (behavior) of the individual consumer towards his/her own vehicle.

The Technical unit relates to the main structural, functional and ergonomic aspects of the designed model.

The Styling unit reveals the three factors that decisively affect the customer final choice when buying a car ("how it looks like") - concept, vision (outlook) and message.

The three-component system builds up the overall philosophy of the ALS concept and has been adapted to modern strategies for automotive design and manufacturing. Fig.6.

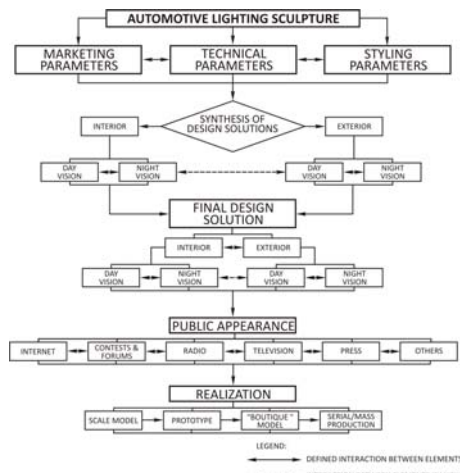


Fig.6. Generalized model of the ALS concept.

5. New horizons. "The Light Plot"

Today the dynamic development of lighting systems in modern vehicles, in particular the interior and exterior, remain stable and the hi-tech horizons (the new cultural borders) in that context provide many new opportunities to be revealed and redefined. The behavior (the attitude to creativity) of the contemporary artist in the transportation design field is not different; it has been just forgotten for a while. The right half of the brain appears to have a strong influence on the vehicles surface language again, but dealing with the extended technical knowledge that has been achieved so far. In that relation, the designers are looking for new options to achieve their aesthetic design solutions taking inspiration not as much the great diversity of technical means as the synergistic interaction between light and form. The efforts which the design specialists have been making in the last decade to create a more sophisticated vehicle are pretty obvious and they do not have to be neglected. However, there are some issues related to driving, which do not fully satisfy the drivers of the roadway yet. According to recent studies, a significant part of drivers are middle-aged (50 years) as the reported refers not only to Bulgarian citizens but also to other European countries.

From psychophysiological perspective this group of participants on road can be reasonably considered as precarious ('rickety', 'liable to collapse'). The reason for this lies in the details of the operation and condition (coordination) of the visual system in the elderly people and in particular the way their visual accommodation works (the process by which the eye changes optical power to maintain a clear image of an object on the retina as its distance varies fig.7). [6]. With increasing age of the person, the ability of the visual accommodation significantly reduces, because the lens becomes less elastic. As a result the clear vision becomes a great physical problem to the driver.

Another major problem relates to the higher values of light intensity of the headlights and especially the direct light that confuses the drivers from all social groups (20, 40 and 60 years old). It is a well-known fact that the systemic exposure to direct intense light (glare) leads to changes in the general condition of the human eye and often followed by a chronic disease. Obviously the night lighting system of modern vehicles carry some risks and problems of social, biological, ergonomic, psycho-physiological and sanitary nature. In that context the concept projects and A'KIMONO and Audibleyes ALS, (fig.8, 9) give an idea of how the future cars might look like as the light discomfort can be reduced to a minimum. For many, this scenario may seem absurd, but it raises questions that are objective in nature.

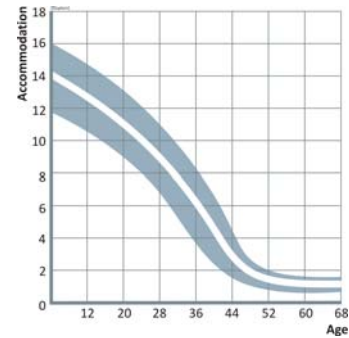


Fig.7. Visual accommodation and age.

The contemporary vehicle has been one of the most complex human invention and a system that dynamically has been evolving over time. In the very beginning, when carriages retreated to the first car, the question that arose then was how safe the new means of transportation would be. Today, the statistics clearly show that human error is essential and it reflects in a number of road accidents.



Fig.8. Audibleyes ALS concept. Exterior - day and night vision - a combination of a monolithic board and unconventional lighting system.



Fig.9. Audibleyes ALS concept - Interior.

Due to those circumstances the hypothesis that has been taken into account is whether it is a reasonable step for the improvement of contemporary vehicles to "lose" the so essential headlights at a certain stage of their development or at least to decrease the intensity of the direct light which has a great impact on human visual system.

The Light Plot (a light scenario) focuses on the advantages that the night vision systems provide in terms of eliminating the glare that affects all drivers on road. Those systems which gradually have been taken into practice remains a "working" solution (a hypothesis) that could influence the issue related to glare. In that context the "Audibleyes ALS" concept gives some perspectives – the symmetrical light panels (with functional and decorative purposes) positioned along the board emphasize the silhouette of the car with diffuse light, while retaining the white light color in front and red rear lights. Thus, blinding light practically could be significantly reduced as the night vision system, introduced as part of driving [10], is to provide information about objects on the road and around.

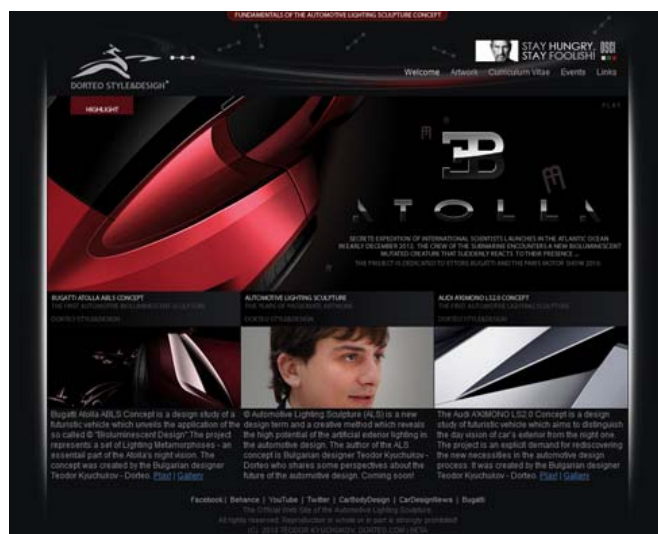


Fig.10. The Official website of the Automotive Lighting Sculpture, Dorteo Style&Design 2012 (www.dorteo.com)

6. Conclusion

The integration of unconventional (alternative) lighting installations with the application of diffuse illumination of certain surfaces in the car body is an author's cue having arisen from the deliberate analysis of contemporary trends (objective pros and cons) in automotive design field and the opportunities that the progressive lighting technologies have been recently providing. Thanks to the artistic and functional exterior lighting the surface language of the vehicle reveal a new imagery of the future means of transportation. It is represented in the following prognosis defining some main aspects of *The Light Plot* (Figure 11):



Fig.11. "The Light Plot".Hypothesis of the development of the 21st century vehicles.

A. The exterior and interior layout of future vehicles will take increasingly strong sculptural appearance to bring the car image closer to the evolution of a living organism.

B. Due to the high technology progress of lighting systems the automotive lighting systems would change as they would accept the case of being "partially reduced" from the car surface combined with a night vision system to satisfy a higher degree of safety. In that scenario the "Light Modeling" and "Light Modulation" would play a significant role.

C. The interior of the car would turn into an environment that could provide the opportunity for the experience of "relaxation in motion".

The Automotive Lighting Sculpture Concept is an open nonlinear system which allows applying different hypotheses and performances in order to seek new approaches and rediscover new needs in the design of motor vehicles as the issue of the ALS concept does remain open to a broad creative and innovative debate.

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