CLAIMS

1. System for integrally measuring clinical parameters of a visual function characterized in that it comprises:

- a display unit (20) configured for representing a scene wherein at least a 3D object on the scene has variable characteristics for promoting a visual response in a user, wherein said variable characteristics include at least the virtual position (X_o,Y_o,Z_o) and the virtual volume (V_o) of the 3D object within the scene;
- a plurality of movement sensors (60) configured for detecting the user head position (X_c,Y_c) and distance (D_c) from the display unit (20);
- a plurality of tracking sensors (10) configured for detecting the user pupils position (x_p, y_p, z_p) and pupillary diameter (d_p), wherein each tracking sensor (10) is configured to register positions of the left eye and the right eye of the user, a location which each of the left eye and the right eye looks at separately, a location at which the user looks by using both the left eye and the right eye in combination in a 3D environment, and an eye-sensor distance defined by a distance between the tracking sensor (10) and the user;
- an interface (30) configured for producing at least variations on the virtual position and the virtual volume of the 3D object within the scene and for allowing the user to interact on the scene;
- processing means (42, 44) configured for analysing the user response based on:

associating the user data measures coming from the sensors (60,10) and user interaction commands on the scene of the interface (30) to features variation of the 3D object represented in the display unit;

estimating a plurality of clinical parameters of the user visual function;

comparing the clinical parameters to a stored range of reference values; and

establishing a possible visual dysfunction based on the comparison.

2. System according to claim 1, wherein the characteristics are variable as a function of time according to a pre-determined programming.

3. System according to claim 1 or 2, wherein the variable characteristics further include colour of the 3D object.

4. System according to any one of the previous claims, wherein the characteristics are variable as a function of the user interaction through the interface (30).

5. System according to claim 4, wherein the interface (30) comprises at least one of the following: a digital pen, a glove, or a control device.

6. System according to any one of the previous claims, wherein the display unit (20) comprises a 3D screen.

7. System according to any one of the previous claims, wherein the display unit (20) comprises Virtual Reality glasses.

8. System according to any one of the previous claims, wherein the display unit (20) comprises a dissociating system.

9. System according to claim 8, wherein the comparison to the stored range of reference values is realized based on the user profile which includes at least age information.

10. System according to any one of the previous claims, wherein the processing means comprise a client terminal (44) and a server (42), wherein the client terminal (44) is configured for receiving and processing the data measured by the sensors (10, 60) and sending them to the server (42).

11. System according to claim 10, wherein the server (42) is configured for comparing values obtained for the clinical parameters with a data base having reference values.

12. System according to any one of the previous claims, wherein the visual function of the clinical parameters refers to at least one of the following: binocularity, accommodation, ocular motility or visual perception.