

System Element	Status:	<input type="checkbox"/> Existing <input type="checkbox"/> Modified <input checked="" type="checkbox"/> Speculative	Title: Virtual Athlete	2
	Originator	Mark Anderson		

Contributors	Superset Element/s: FitWorld	Related Elements: Digital Trainer AccuSense Posture Comparator Status Screen Vital Scanner Personal Profile FitCards MemoryTrain FitZone
Source (if <i>Existing</i> or <i>Modified</i>):	Subset Elements:	

Description:

A virtual version of the athlete appears on the **Status Screen** video readout, providing visual feedback about exercise form. Besides the added visual interest, this computer-generated image also provides a basis for feedback from other system elements—**AccuTrain's** active muscle callout, form correction from the **Digital Trainer** and the **Posture Comparator**, and the exertion level feedback of **FitZone**.

Properties – what it is:

- A three dimensional image of the athlete
- Informed by the user position data from the **AccuSense** position sensors
- Natural motion reproduction software
- A context upon which the **Digital Trainer** and the **Posture Comparator** can provide further feedback
- A simplified version of a body
- Viewable from several useful angles—and perhaps even shown from two or three angles at once
- Highly integrated into **FitWorld** virtual training landscape, which provides a visual environment in which the **Virtual Athlete** can be shown

Features – what it does:

- Gives immediate feedback about posture and form
- Focuses on showing real-time motion more than physical attributes such as color and style of hair or clothing
- Works with the **Digital Trainer** and the **Posture Comparator** to illustrate proper form
- Adapts to whatever activity is occurring—from running to rowing and beyond
- Points out specific areas on the body via **AccuTrain** when suggesting corrective measures
- Moves through **FitWorld** in a way that makes sense for the particular fitness activity
- Changes colors to reflect **FitZone** fitness zone feedback, providing a quick, qualitative indication of exertion level
- Guides user in proper technique when controlled by the machine instead of user position
- Displays technique for stretching and yoga as well as common machine exercises

Fulfilled Functions

3. Employ family image
10. Display proper technique
11. Monitor user technique
12. Compare performance to ideal
13. Offer technique correction
17. Stretch body
20. Maintain posture/form
21. Maintain proper exertion
26. Incorporate multimedia
29. Display danger warnings
39. Interpret feedback
43. Achieve goals
45. Relax between efforts

Associated Design Factors

2. Monitoring User in Motion
7. Information Prioritization
8. Proper Exertion Maintenance
9. Interpretation Uncertainty
10. Attention Division
15. Exercise Form Definition
19. Workouts Can Be Boring
24. Useful Feedback Determination
25. Machines Not Implicitly Encouraging

Discussion

A common complaint about exercise equipment is that it is boring. There may be changes in speed or resistance, to vary the routine of the system. Heart rate monitors provide feedback that ties one's own feelings to a physical readout, and that is a step forward in interactivity. It is interesting to see feedback about our own bodies.

One way to provide extra feedback that can engage users is to show them more about themselves. Why do health clubs have so many mirrors? To allow people to monitor and improve their own posture and form. On exercise machines, form is important because repeated motions with poor form can result in injuries and stress instead of the intended goal—better health.

The **Virtual Athlete** takes the idea of feedback further than mirrors and heart rates. Using advanced sensors to monitor dynamic body position (**AccuSense**), the system recreates an image of the athlete on screen, allowing immediate understanding of form and position. As with mirrors, simply seeing one's posture is sometimes enough to inspire that person to straighten up to look stronger.

Expanding from there, it would add further interest to add some evaluative tools to the virtual image. Instead of relying on the person to recognize the need to straighten up their posture, the **Posture Comparator** can gently aid that process by projecting an ideal position over the person's **Virtual Athlete** reflection. Similarly, the **Digital Trainer** can identify specific areas on the body to pay attention to, and the **AccuTrain** system can identify the particular muscle groups that are being targeted by the activity. **FitZone** can help athletes stay in their desired fitness zones by altering the appearance of the Virtual Athlete—for example, the color could change to red if one begins to exercise in the danger zone of high heart rate.

These evaluative tools can be tracked over time, to help design future workouts and specific problem areas. At this point, the **Personal Profile**, **FitCards**, and **MemoryTrain** can all contribute to the database of useful information.

The **FitWorld** environment provides the backdrop for the **Virtual Athlete**, and lends context to the various changes in resistance of programmed workouts. When combined with the **Digital Trainer's** varied workouts, the whole system becomes an advancement over existing systems in terms of engagement of the users. Overall, the result is more dynamic feedback for users, which means more to hold their interest, and more reason for them to keep coming back.