

Augmented Reality

A new way of seeing



Augmented Reality

What is it?

Example of an Augmented-reality display. The computer-generated graphics is overlaid onto the real world. In real time.



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Augmented Reality

What for?

- Assisting difficult tasks. e.g., visualisation of instructions for manual operations like maintenance, surgery and navigation
- Visualisation during presentations and product demonstrations
- Training can be made much more practice- oriented
- Simulation for design
- Tourism, museums etc
- Entertainment
- Games
- Etc...



by Overig



by Parrot!

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Augmented Reality, overview

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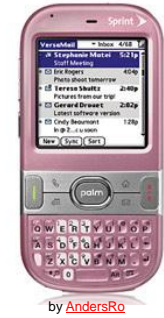
Location specific
factory quality
street signs
military

Object specific
equipment repair
service check-in
healthcare



Person specific
name reminder
hotel/airport check-in

Telepresence
healthcare
commerce
community



Power of the Web at point of decision

Merging of the physical and digital worlds

Virtual objects in the real world (games, coupons)

Augmented Reality

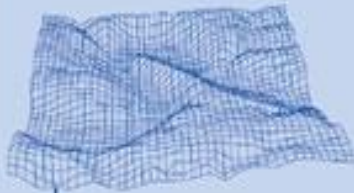
Car navigation system from Siemens

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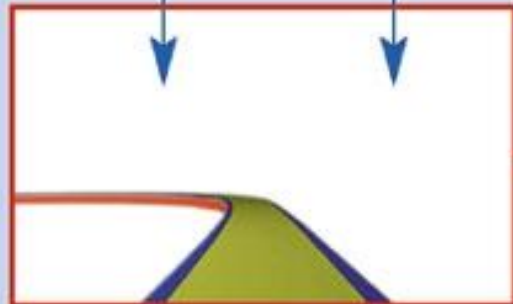
Navigation system calculates route and current position



3D map knows topography of area



Onboard camera captures live picture of the view in front of the car



AR system calculates 3D view of the recommended route



Navigation system display shows combined (AR) camera view and 3D route

Combining GPS navigation with onboard camera and a monitor.

Source: Siemens

Augmented Reality

Night vision system from Siemens

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A prototype showing the driver a clear image of the road during night driving. One quarter of all serious traffic accidents take place in the evening or at night.

Source: Siemens

Augmented Reality

BMW at CeBit



BMW's prototype, showed at the CeBit exhibition (Mars 2004), with the aim to bring 3D models into dealer workshops combined with a real-time camera and human interaction.

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Summing up

- An emerging area just in the beginning of its era
- There are a few commercial products available. We can expect far more to come
- Games and entertainment will be leading, followed by navigation tools and tourist guiding. Examples are already in place.
- Within marketing and design we can see the first industrial applications starting to take place. Prototypes done by for instance Boeing and Renault
- There is also a potential within manufacturing as well as the after market service in the future