Project Dexter

Say what?

This is a newbie(becoming -ish) discovery project: This project has much broader scope than the description that follows. If I find anything more interesting, I will likely follow it. Alas! I have little time to indulge and there is no Radioshack here. I originally wanted to use ATRF211's (I have not soldered anything yet - ever so those 0603's are how can I say scary) but I am busy looking at Bluechip RFB433 blocks atm as they seem simpler. To follow a ordered path, I have set the following at my Hello project. To determine the relative position of a transmitter w.r.t the receiver (distance and direction). I am not sure if I will need triangulation to sort this out but thats ok too. It is probably going to come down to signal strength for distance and whatever for position. Looking at 300m radius for now (but would have liked 5km more). I can go on forever. Lemme dump into a file rather…

The Project "Objective" (Step 1)

1. Build a receiver and transmitter that can 'see' each other.
2. Look at how signal strength is affected by distance put it on a display in meters.
3. Erm I suppose a magnetic compass won't change enough to use it for direction calculation so therefore use a third object (transceiver/transmitter) as a reference point or co-ordinator.

House automation

1. Lights. I want to look at environmental lighting at home. I eventually want the lights to be something more of a luxury and less of a dull on/off utility. I am thinking of things like changing light colour, brightness and direction based on things like time of day and even season. I hear LED's are pretty cool as light.
2. Camera. I want to use the infrared sensors of the alarm system in order to activate things (like putting on the lights as you walk through a house).
3. Action? Everybody needs music. I want to get to a point where the house has a web server/central electronic infrastructure running. None of that fridge buying on the internet stuff though – that's plain overkill. I want speakers everywhere playing from the same base source. I also want some management and communication facilities. To begin I suppose switching on the gardening watering system would be a good start. I know someone who modifies cell phones in order to make them open gates. That may be fun but sounds like too much work. Will likely just build an infra-red thingiemabob.
4. Neighbourhood watch and sub-suburban lanfests: using computers as infrastructure. They are called neighbours 'cos they live next to you. Its still a brewing idea. Maybe a neighbourhood network of sorts but something non-intrusive and basically just there because it can be.

More in Step 1

1. Once I have something that can determine distance and direction, I want to use PC software to map to GPS co-ordinates. From there is easy to put on a live map. It sounds a bit dodgy (am I the guy from that movie Jack and the Bean Stalker?). Giggle. Maybe build a dog-collar with this on it. If that Staffie (Staffordshire Bull Terrier) bitch of mine goes running down the

road chasing Dachshunds, I want to know about it. How many times have I let the bath run over because I am glued to the PC?

OK. That should be a broad enough scope to play with. I doubt I will get any of it done but you have to (or at least pretend to) start somewhere.

The story so far

1. I am getting to know Microcontrollers better. I am using AtMega and AtTiny's. I managed to get the USART working on an AtMega8. I took some C# (.Net 2.0) code and adapted it to work around the issues I have encountered.
2. I am now busy building some basic circuits and I am playing with the ATMEL application note dealing with DTMF signals. I got it compiled for the ATMega 8 and I am busy sorting out interrupts and using USART instead of a keypad to send off the signals.
3. I should be able to afford a nice cell phone year end. I want to look at using the Microsoft stuff there as it is my area of expertise and will make things go better. I don't know enough about Symbian to say anything useful. The Bluetooth and Wireless stuff is expensive to develop and seem to be too much work for now so I am going to try stick to RF as much as possible.