Enterprise Solutions

MOBILE WORK FORCE TAILORING

# Mobile Work Force Tailoring

## Mobile Work Force Tailoring

Hardware and communication standards in the PDA World have been slow in arriving, with many applications which were a perfect fit at the time of purchase being confined to the "obsolete technology shelf" or the "stovepipe application cupboard". Happily the standards are arriving: Pocket PC, Windows and browser applications, IEEE WiFi, GPRS and 3G, etc., all seem to be mobile standards which are here to stay.

Browsers on Pocket PC's with cellular connections, make live mobile database solutions inexpensive and straightforward.

iiS has traditionally developed heavily around standards, and adopted a "wait and see" stance on technology which may not lead to further standardisation.

### Normalisation

The overall iiS approach to solution adaptability is "configurable, and based on as generic a data model as possible". Normalisation is a big part of our approach, and we strongly recommend against denormalisation. Normalisation may sound like an academic database-design concept, but actually carries a simple sentiment: the database design should mimic the real world.

### Why is Normalisation Crucial?

A clear example of normalisation might consist of equipment assets and buildings, whereby a customer operator contacts us and says "I'm trying to delete a building, but the system won't let me because it says there is equipment with the same building reference." In this case, the system is protecting the customer by mimicking a real world rule: "you can't demolish the building before you've taken out the equipment." If the building no longer belongs to you, you would move the equipment to another of your buildings, move to storage, etc.

Customers often ask about the consequences of denormalisation, and the answer is something like "absolutely nothing negative may happen, but on the other hand you may have significant issues - only time will tell."

### Generic Call Logging Data

The data structure of iiS's call logging software is quite generic, so can be adapted by other applications. iiS software can usually be adapted to other databases, as long as their developers are also fully committed to normalisation.

### A Typical Set of Call Logging Data

- Job Code (system generated)
- Created (date and time)
- Status (issued, responded to, contained, completed, etc.)
- Customer
- Requested By
- Phone (of requestor)
- Email (of requestor)
- Fax (of requestor)
- Site
- Building (Code and Name)
- Floor
- Room/Desk
- Location (descriptive, if building, floor, room not available or not indicative)
- Description (the general description of the work, which may come from a list of common problems)
- Logged By (the operator's user ID)
- Attachment (to be sent with issue and confirmation emails)
- Job Category (normal, urgent, emergency; P1, P2, P3, etc.)
- Work Type
- Contractor
- Asset Code
- Process (for PPM)
- Estimated Cost
- Work Date (if known to be different from date call logged)
- Job Ref 1 (for general customer-defined input)
- Job Ref 2 (for general customer-defined input)
- Approved Date
- Chargeable (such as not covered by term contract)
- Operator Notes (private notes unseen by customers)

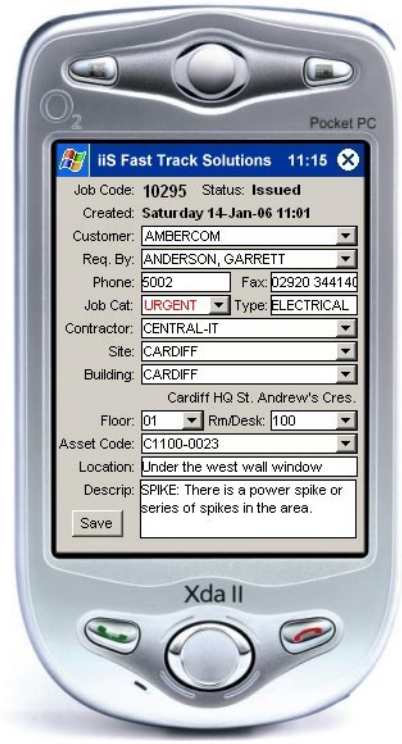
### The iiS Pocket PC Approach

iiS's main Pocket PC approach is to use a browser to run the same software as our main applications. The only real difference is that the screen view has to be redefined for a smaller matrix. This means that an engineer can take delivery of an XDA2, type in a URL, and be monitoring work in a matter of minutes. Updates are completely live, so that if the engineer's XDA2 is stolen or damaged, he will not lose any work or data of any description, and simply has to take delivery of another XDA2.

With office-intensive applications such as internal

maintenance or conference room occupancy checks, WiFi Pocket PC's can be used, with an additional benefit that they are much faster than those with cellular connections. With the advent and proliferation of 3G, however, mobile device speeds are catching up, with 384 Kbps being readily available, and much faster speeds on the way.

**Connection-Unfriendly Locations**
If users know they are going into a connection-unfriendly area, such as an underground facility, iiS's Fast Track Pocket PC applications can be used to receive instructions from the server, update them as necessary, and then return the data to the server. The retrieval and update of data is a straightforward process, and can be achieved using wireless methods BEFORE going in the connection-unfriendly location, or by Pocket PC cradle at any time (retrieval, edit and update can all occur within the connection-unfriendly location).




Call information can be retrieved for work in connection-unfriendly locations

**API for 3rd-party Applications**
iiS's position on interfacing to 3rd-party applications is that it is usually not difficult at all, but each case needs to be considered, because business and technology factors mean that iiS's software is developing and changing, 3rd party software is developing and changing, and the end-user's requirements are developing and changing. The API for certain areas of the software are completely open where applicable. For instance, when data is downloaded to the Pocket PC for work in connection-unfriendly locations, field and column names are not used - the order of the data used to determine its significance; the host system's database tables and columns can have completely different names to the iiS software.

**Geographical Work Allocation**
If a hardware and/or communication specification is not yet an industry standard, the more sophisticated it is, the more likely it will suffer if a competing technology becomes the standard. For instance, a number of years ago, IEEE 802.11 was one of several specifications for wireless network communications - but even though no panel has judged it "the industry standard", you can comfortably rely on it for the future. In attempting to protect customers against future upheaval, iiS aims solution sophistication at software which will work with industry-standard hardware and communications.
iiS's solution uses readily available location information, for contractors, engineers, assets and work locations, in the form of postal codes. When a call is logged or generated, it is allocated to the resource with the applicable skill set in the same area as the work location. If resource load-balancing is being effected, calls can be passed to applicable resources in the same or nearby areas. Reassignment of work can be fully automatic or use the "suggest and confirm" mechanism, reflecting the fact that computer decisions on work and geography may not be perfect. The ascertainment of "nearby resources" is possible because of an adjacency matrix of towns and cities.

**Geographical Adjacency Matrix**
The matrix is a set of data which essentially holds information on how far each town and city is away from each other town. For instance, if there is Electrical work to be done in Bristol, but all the electricians are tied up, it would be better to pass the overflow work to an engineer in Bath than to one in Swindon. The


Overflow calls in Bristol are passed to Bath engineers rather than Swindon engineers

judgement is possible because Bath postal codes are closer to Bristol postal codes than are Swindon postal codes.

## For more information, contact iiS or your iiS Reseller

iiS provides solutions for the Work Management and Space/Room Booking fields, with software categories such as Help Desk, Planned Maintenance, Conference & Meeting Room Booking, Hot-Desking, etc.