

November 1998

doc.: IEEE 802.11-98/363


 AmeriSys Inc.
 17 Belgoise, Dollard-Des-Ormeaux
 Canada H9G 2A7
 Tel: 514-620-8522, Fax: 514-620-3900
 Info@AmeriSys.com
 http://www.amerisys.com



Personal Data Carriers and Access Points

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 Submission presented to the IEEE802.11 WPAN
 November 1998

Submission

Slide 1

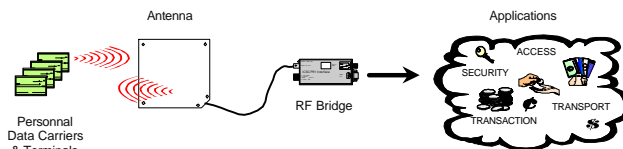
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Example Existing Products



- Worldwide, HF-ISM band, 106 kbaud data rate
- built-in mutual authentication and encryption
- small non-volatile memory (a few k bits)
- sub-dollar carrier silicon costs
- low power - many have NO batteries!

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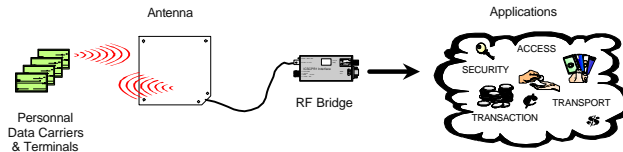
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Multiple Carriers/Network



Terminal-Host architecture
 Single Host network at any given time
 1 to 2 meter Host network range

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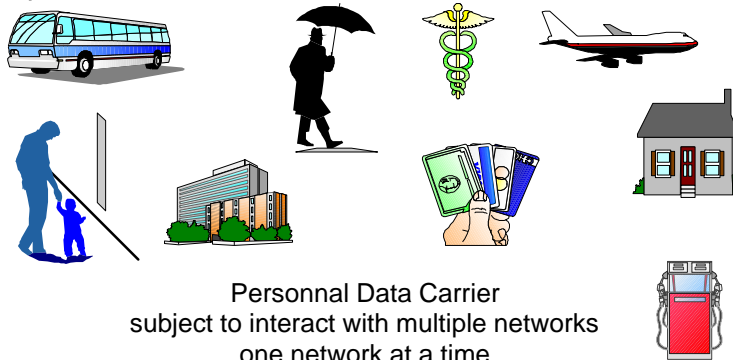
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Multiple Networks/Carrier



Personal Data Carrier
 subject to interact with multiple networks
 one network at a time


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Multiple Carrier Formats



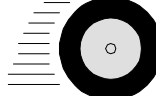
Traditional
ISO credit/debit
card




Employee
Badge




Key
Tag



Tire



Watches




Garments

formats linked to application functions
 existence is part & parcel of the environment
 carriers are generally embedded automatons
 use is generally ubiquitous
 cost is a major driving force


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Multiple Access Point Formats




Turnstile
Crowd flow control
Access Control



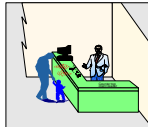
Building facilities
garage
pool
Laundromat
apartment access



Transit
Fare collection
Route scheduling
Incident control



Road-Tire AP
parking
toll roads
navigation aids



Counters
Hotel Check-in
Transaction

formats linked to application functions
 existence is part & parcel of the environment
 use is generally ubiquitous

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Access Point Users



Humans



Children



Automotons



Farm Animals

formats linked to application functions
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 cost is THE major driving force

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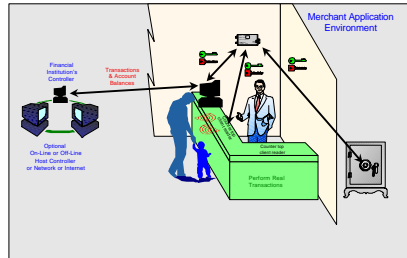
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Typical Interaction



a transaction may involve multiple personal data carriers
 each performs it's small dedicated background function
 each access point also performs a simple function

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Typical Device Properties

- Currently have no display
- Currently have no keyboard
- Function defines form
- platform for distributed database records

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Broad Market Potential

- Millions of data carriers in use today
- Corresponding quantity of access points
- Many manufacturers of PDCs and APs
- requested functionality is increasing

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Technical Feasibility

- Is an extension of existing devices
- simple bridging function is possible
- maverick implementation is happening

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Economical Feasibility

- Millions in use today
- cost is already accepted in niche markets
- Extension to LANs may be inexpensive

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