Cellular IP

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IP Mobility

<table>
<thead>
<tr>
<th>Mobile IP</th>
<th>GPRS</th>
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<td><strong>W-LAN</strong></td>
<td><strong>UMTS</strong></td>
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Simplicity and Scalability?

- m-Router...

- ...arbitrarily interconnected and

- ...automatically handling mobility and handoffs.
Cellular IP

A cellular wireless access network that has

- mobility management
- paging
- handoff
- passive connectivity

...yet it has no

- central location data base (HLR)
- switching centre (MSC)
- signalling system
- notion of “connection”

Distributed!
Mobile IP and Cellular IP

- Mobile IP not appropriate for cell-granularity, but can provide global mobility support.
- Cellular IP does not scale to a global level, but it provides fast smooth handoffs on a local scale.
Cellular IP: Uplink packets create location information

Node is “self-sufficient”: 
Cellular IP: Handoff is automatic

- Redirected uplink packets create new downlink path
- Old path disappears after timeout
- No handoff control messaging, handoff does not differ from normal operation
Information

comet.columbia.edu/cellularip
draft-valko-cellularip-00.txt
ACM Computer Communication Review (January ‘99)

Current Work

simulations (ns): performance
implementation (FreeBSD, WaveLAN), public domain soon