Architecture Consideration for Handoff Between 802.11 and 3G Cellular

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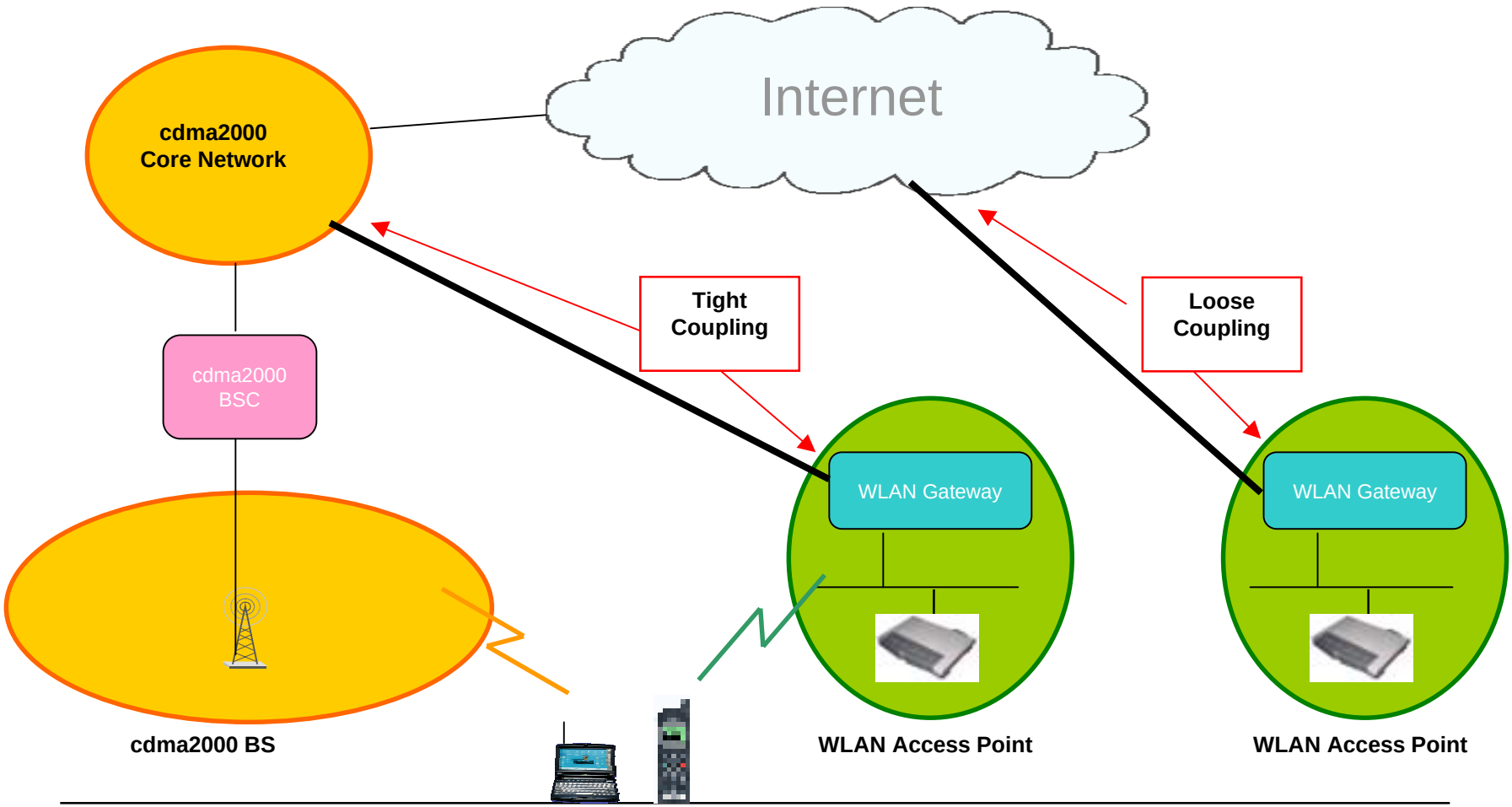
Introduction

- Depending on the technical requirements (such as security, end-to-end QOS, and seamless handoff for session continuity/service continuity), the integration of 3G and Wi-Fi networks can occur at different coupling points.
- There are three general approaches: open coupling, loose coupling and tight coupling.

Coupling Options

- In open coupling, 3G and WLAN networks have complete disjoint operation in data and control paths.
- In loose coupling, 3G and WLAN networks have complete disjoint operation in data path. The control protocols that handle authentication, billing and mobility management in the respective network need to be interoperable with each other.
- In tight coupling, the WLAN can be integrated into the 3G core network or 3G radio access network

Loose and Tight Coupling



All Options Worth Considering

- All options have their pros and cons (see the next slide).
- No option should be ruled out at this stage.

Preliminary Tradeoff Analysis

	Loose Coupling	Tight Coupling
Security	Medium	High
Impact on existing 3G cellular network architecture	None	High
Handoff speed	Slow	Fast
Session continuity	Yes	Yes
Service continuity (VOIP)	No	Yes
WLAN gateway required	Yes	Yes
WLAN traffic injected into cdma2000 core network	No	Yes
QOS provisioning	Over-provisioning	Reuse 3G QOS architecture
Standards development time	Short	Long

Conclusion

- Proposed text in the baseline document for Handoff ECSG
  - "All options of inter-working between 802.11 and 3G cellular (such as loose coupling and tight coupling) need to be considered"