

School of Computing Science and Engineering

Course Code : BCSE3065

Course Name: Mobile Computing



WAP

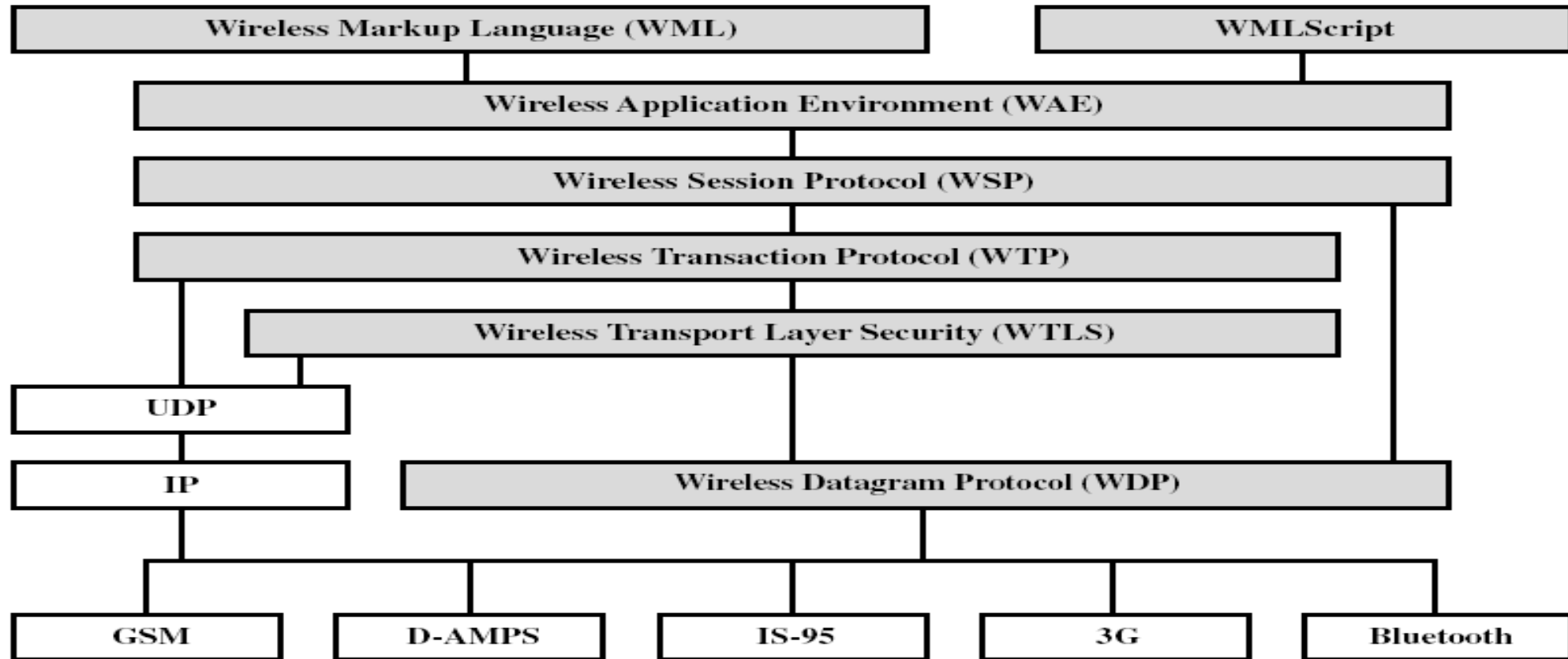
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WAP Architecture

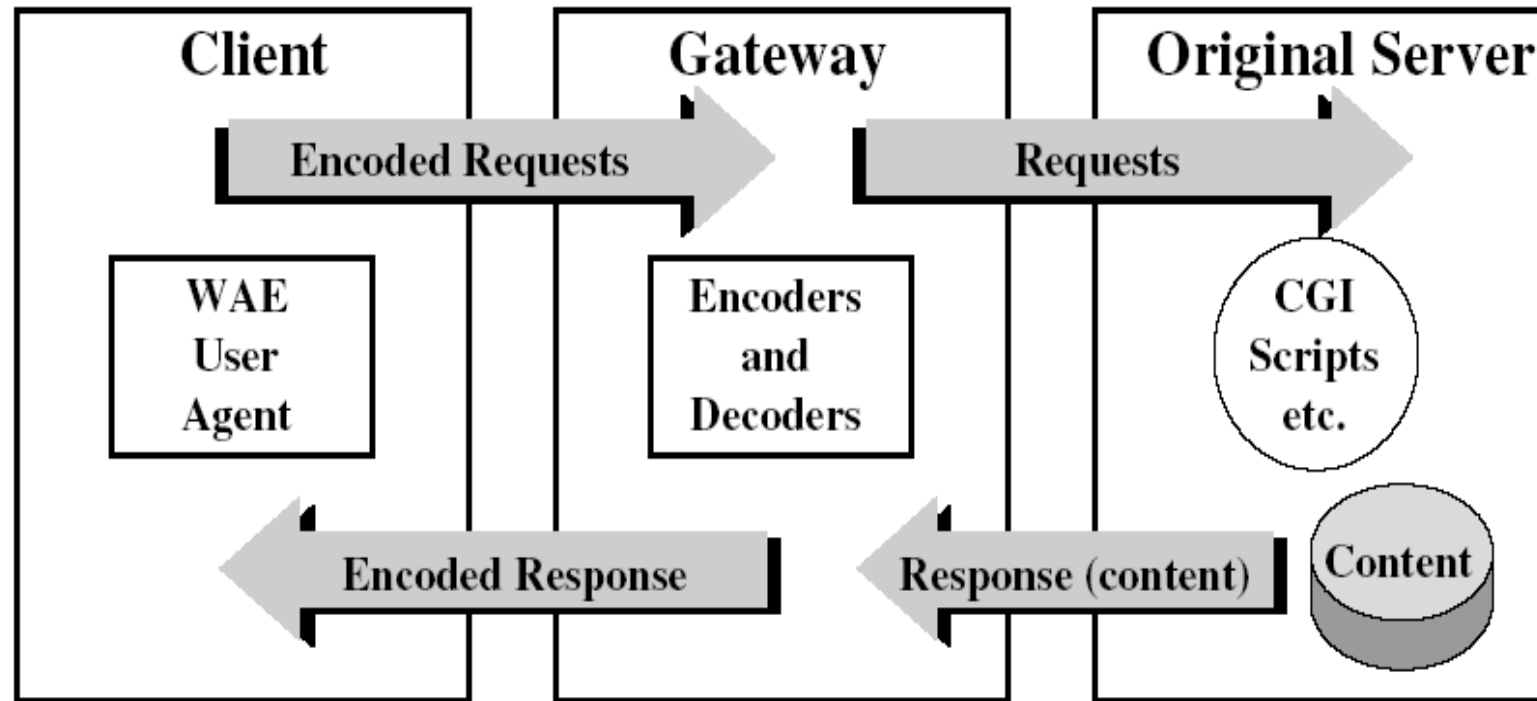
- **WAP is designed to work with all wireless network technologies (GSM, CDMA, TDMA)**
- **WAP Specification**
 - **A programming model based on the WWW Programming Model**
 - **A markup language, the Wireless Markup Language, adhering to XML**
 - **A specification of a small browser suitable for a mobile, wireless terminal**
 - **A lightweight communications protocol stack**
 - **A framework for wireless telephony applications (WTAs)**

WAP

Architectural Overview

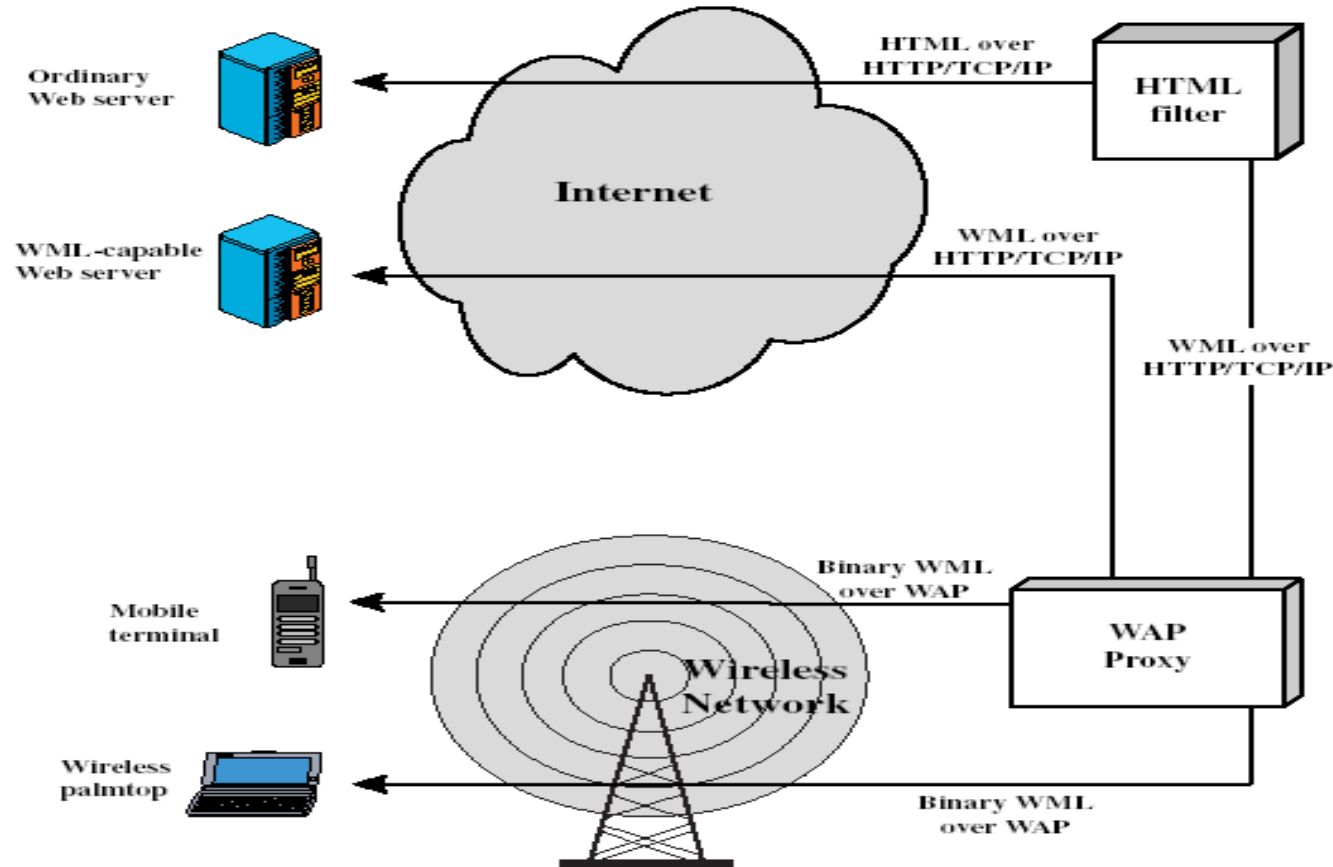


WAP Programming Model



WAP

WAP Infrastructure



WAP Design Considerations

- **Limitations of the mobile node**
 - Small screen size
 - Limited input capability
 - Limited processors, memory, and battery life
- **Wireless networks**
 - Relatively low bandwidth
 - High latency
 - Unpredictable availability and stability compared to wired connections

WAP Related Protocols

- **Wireless Markup Language (WML)**
 - Designed to describe content and format for presenting data on devices with limited bandwidth, limited screen size, and limited user input capability
 - Mainly **text-based** information that attempts to capture the essence of the Web page and that is organized for easy access for users of mobile devices

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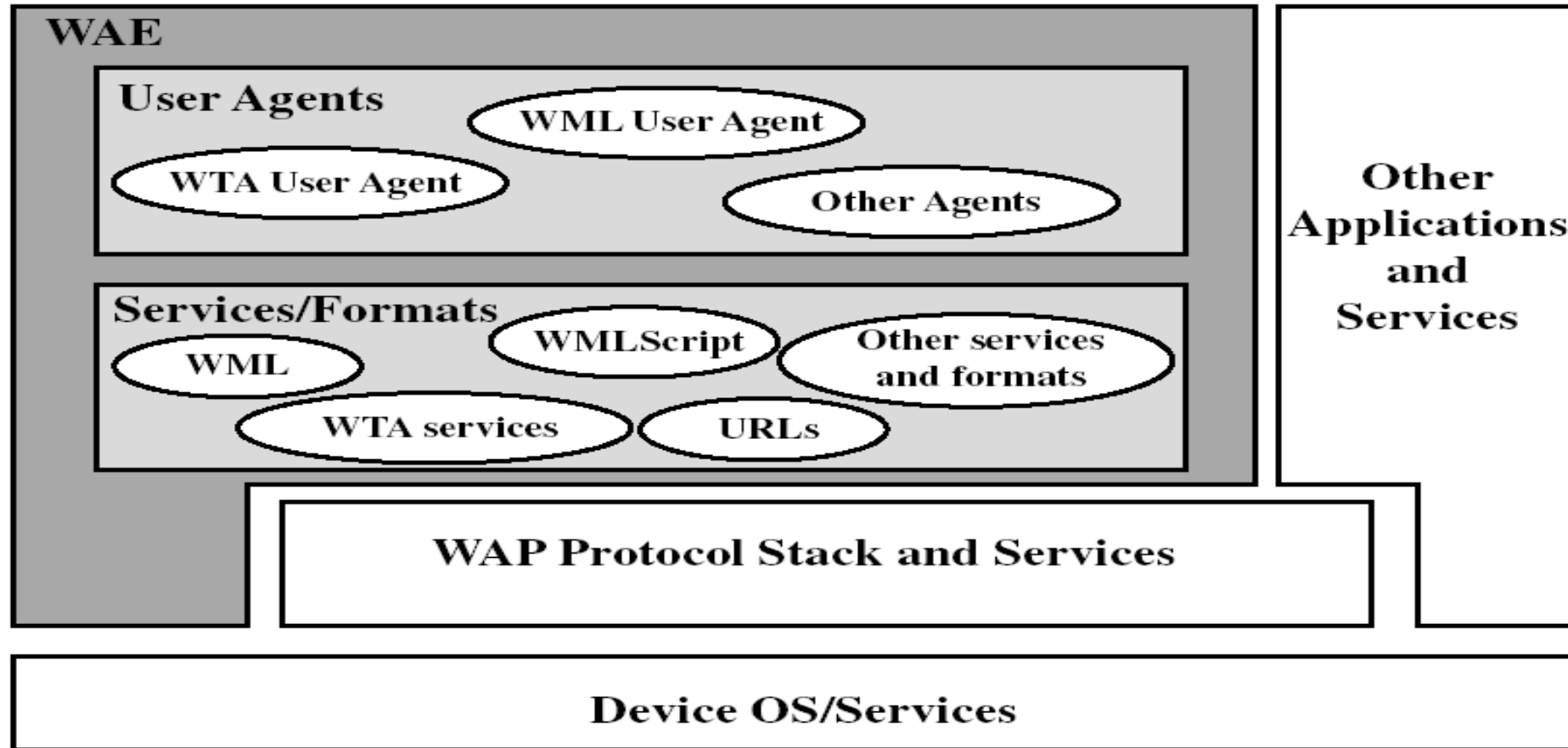
WAP Related Protocols (cont)

- **WMLScript**
 - A scripting language with similarities to JavaScript
 - Designed for defining script-type programs in a user device with limited processing power and memory
- **Wireless Application Environment**
 - Specifies an application framework for wireless devices such as mobile telephones, pagers, and PDAs

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WAP

WAE Client Components



WAP Related Protocols (cont)

- **Wireless Session Protocol (WSP)**
 - WSP is a **transaction-oriented** protocol based on the concept of a request and a reply
 - WSP also defines a server **Push** operation, in which the server sends unrequested content to a client device (e.g. broadcast messages)
- **Wireless Transaction Protocol (WTP)**
 - WTP provides a reliable transport service but dispenses with much of the overhead of TCP

WAP Related Protocols (cont)

- **Wireless Transport Layer Security (WTLS)**
 - **WTLS provides security services between the mobile device (client) and the WAP gateway**
 - **WTLS is based on the industry-standard Transport Layer Security (TLS) Protocol, which is a refinement of the **secure sockets layer (SSL)****
 - **TLS is the standard security protocol used between Web browsers and Web servers**
 - **WTLS is more efficient than TLS, requiring fewer message exchanges**

WAP Related Protocols (cont)

- **Wireless Datagram Protocol (WDP)**
 - **WDP is used to adapt a higher-layer WAP protocol to the communication mechanism used between the mobile node and the WAP gateway**

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Thank You