



ADVANCING NEAR  
FIELD COMMUNICATION  
TECHNOLOGY

# Spotlight Session for Developers

November 5, 2010  
San Francisco



# Welcome

**Paula Berger**  
Executive Director  
NFC Forum

# Message from the Chairman

**Koichi Tagawa**  
SONY  
Chairman  
NFC Forum

# Today's Host

**Shishir Gupta**

ST-Ericsson

Vice Chairman, Ecosystem Development Working Group

NFC Forum

# Today's Agenda

10:15-10:45 NFC Use Cases in Action

*10:45-11:15 Networking Break / Exhibit Area Open*

11:15-11:45 Update on Core Specifications and What's Next

11:45-12:00 Upcoming Work on Application Profiles

12:00-12:15 How NFC Forum Certification Will Speed Devices to Market

*12:15-1:00 Lunch*

1:00-2:15 Programming Example: Symbian

2:15-3:00 Roundtable / Panel on Android NFC API

*3:00- 3:15 Networking Break / Exhibit Area Open*

3:15-4:00 Panel: Lessons Learned from the Field

4:00 Q&A

# Today's Objectives

- Provide you with the latest updates on NFC
  - Where it stands and where it's headed
- Challenge you with the possibilities!
- Unique opportunity to ask questions to the leaders in the NFC technology
- Provide the latest update on NFC ecosystem development

# Thank You to Our Sponsors!

PLATINUM SPONSOR

inside  
CONTACTLESS

# Thank You to Our Sponsors!

## GOLD SPONSORS

**NOKIA**



## SILVER SPONSORS



Integri is now a  
Clear2Pay product

**SONY**  
make.believe





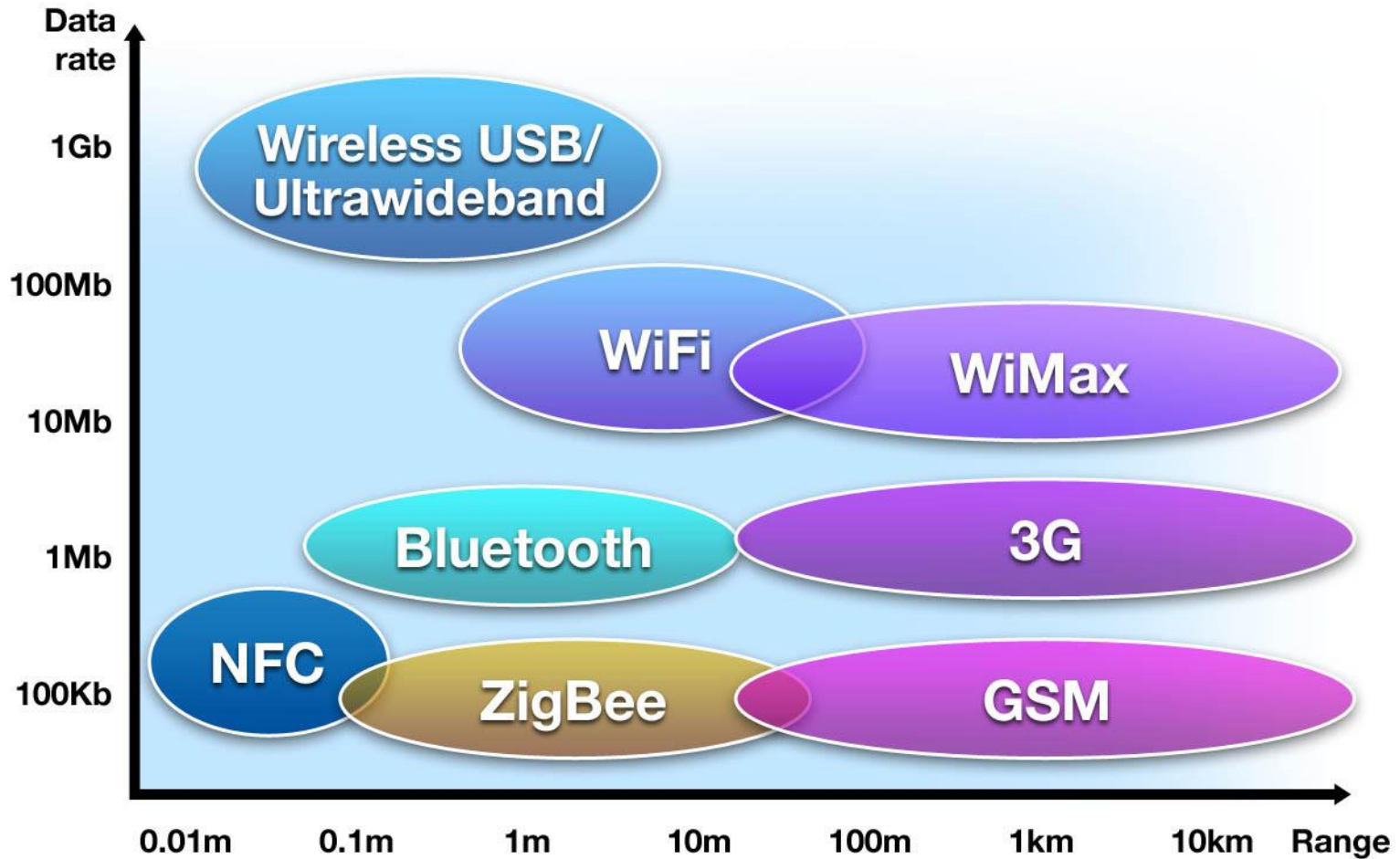
ADVANCING NEAR  
FIELD COMMUNICATION  
TECHNOLOGY

# Update on Core Specifications and What's Next

Ian Keen  
Broadcom  
Co-Chairman  
NFC Forum Technical Committee



# Wireless Market Space



- Proximity and Vicinity Standards:
  - ISO/IEC 14443 - Proximity
    - Included as a base standard in Digital Protocol and Analogue specifications
  - ISO/IEC 18092 – NFCIP-1
    - Included as a base standard in Digital Protocol and Analogue specifications
  - ISO/IEC 15693 – Vicinity
    - Out of scope of NFC Forum work

# The Foundation is Working

- We are learning that one size does not fit all!
  - Different markets have different needs
  - Different combinations of players lead to different solutions and vice versa

## **The good news...**

**NFC Forum specifications are flexible enough to support all programs to date**

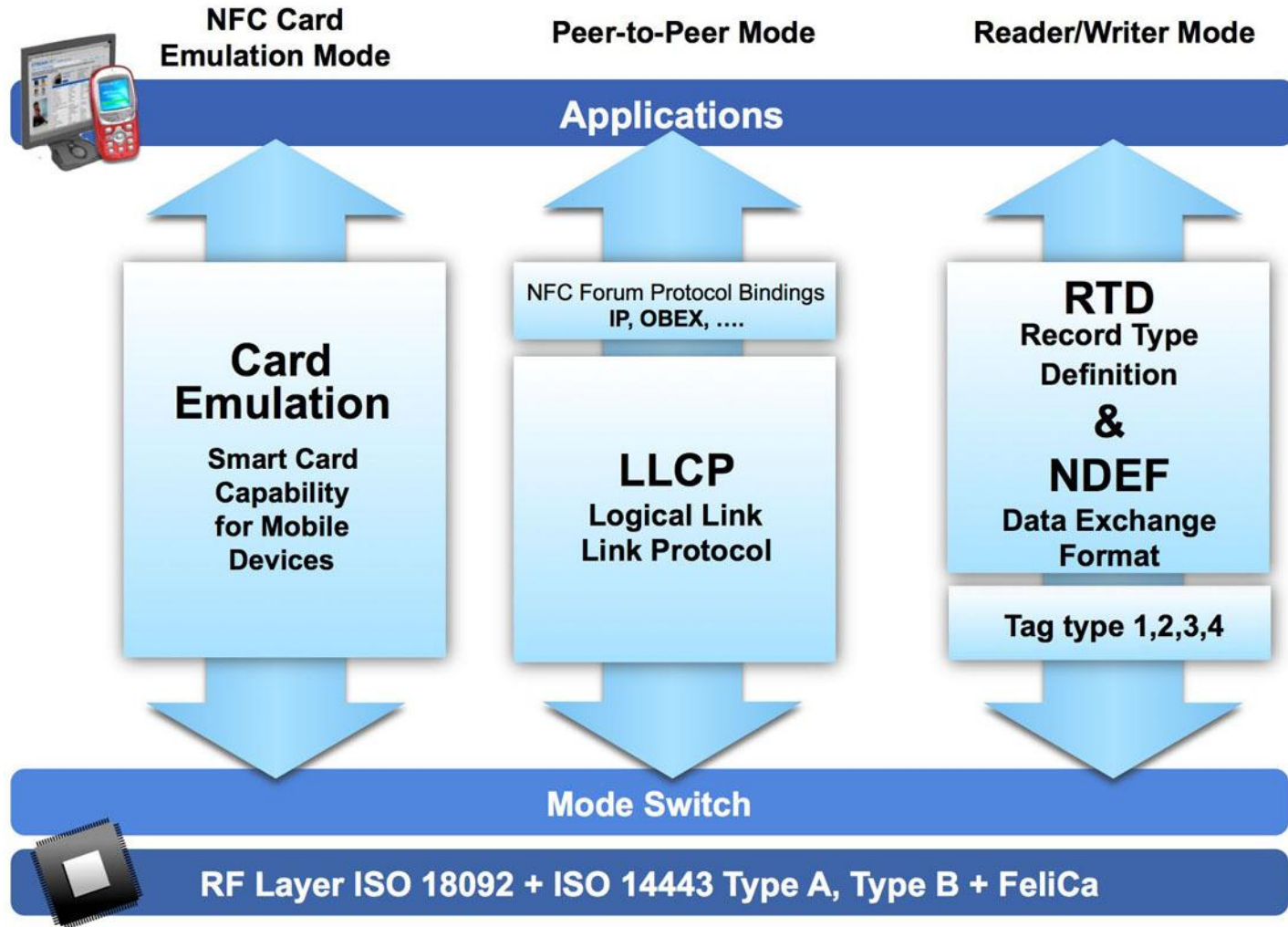
# Specifications are Stable and Flexible

- The NFC Forum has finalized 15 specifications
- Our core specifications enable a basic level of interoperability
- Our standards are flexible, global, universal, and device independent – a solid base of technology that will work no matter what approach each implementation takes
- Our specifications are building blocks – applicable to many verticals and use cases

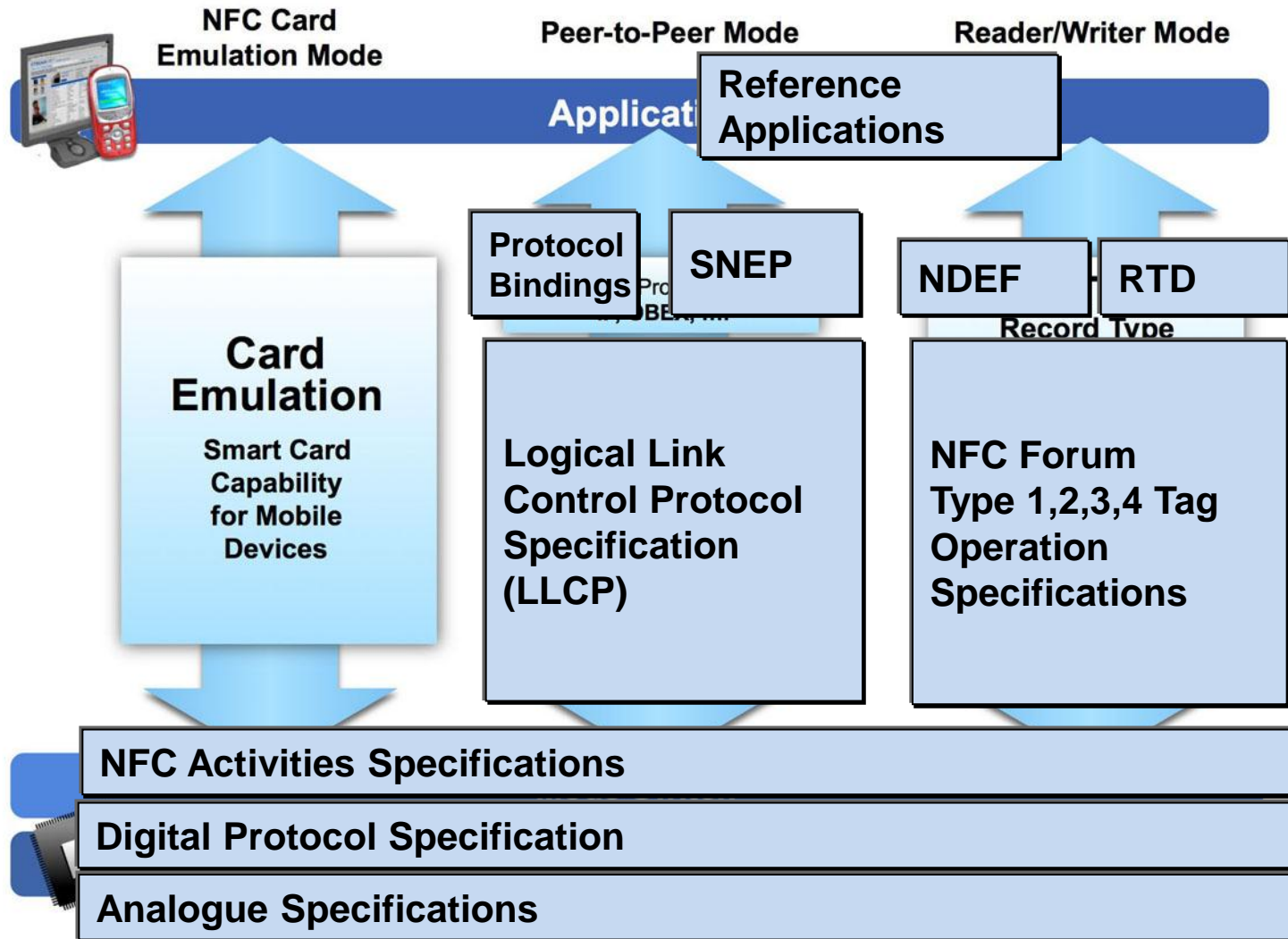
# 15 Specifications Published as of November 2010

Specification	Milestone	Date
<b>Data Exchange Format Technical Specification</b>		
NFC Data Exchange Format (NDEF) Technical Specification	Adopted	24-JUL-2006
<b>NFC Forum Tag Type Technical Specifications</b>		
NFC Forum Type 1 Tag Operation Specification	Adopted	9-JUL-2007
NFC Forum Type 2 Tag Operation Specification	Adopted	9-JUL-2007
NFC Forum Type 3 Tag Operation Specification	Adopted	16-AUG-2007
NFC Forum Type 4 Tag Operation Specification	Adopted	13-MAR-2007
<b>Record Type Definition Technical Specifications</b>		
NFC Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Text Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC URI Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Smart Poster Record Type Definition (RTD) Technical Specification	Adopted	24-JUL-2006
NFC Generic Control Record Type Definition (RTD) Technical Specification	Adopted	7-MAR-2008
NFC Signature Record Type Definition (RTD) Technical Specification	Candidate Release	11-NOV-2009
<b>Reference Application Technical Specifications</b>		
NFC Forum Connection Handover 1.2 Technical Specification	Adopted	7-JUL-2010
<b>Protocol Technical Specifications</b>		
NFC Logical Link Control Protocol (LLCP) Technical Specification	Adopted	11-DEC-2009
NFC Digital Protocol Candidate Technical Specification	Candidate Release	3-APR-2009
NFC Activity Candidate Technical Specification	Candidate Release	12-MAR-2010

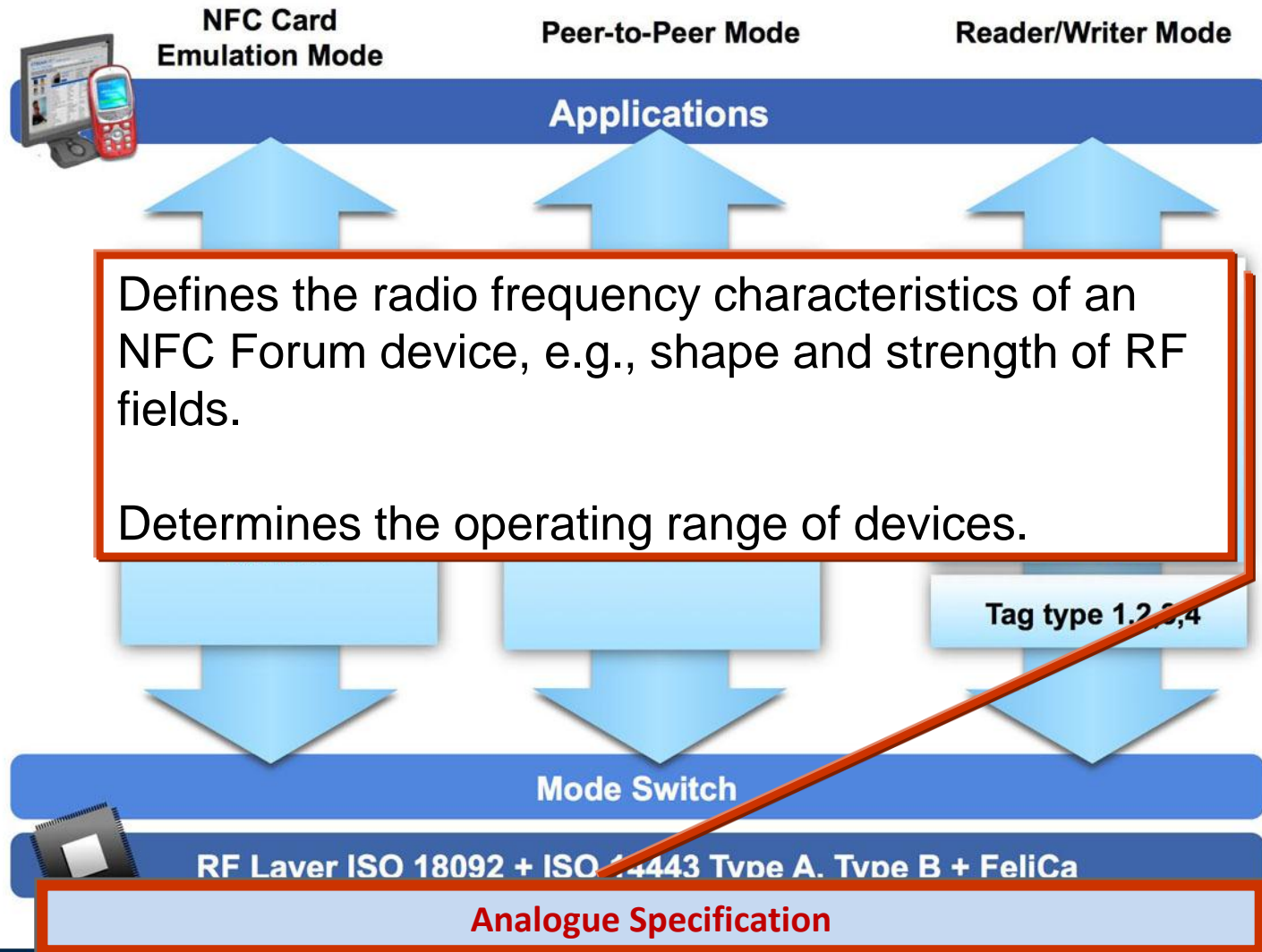
# NFC Forum Technology Architecture



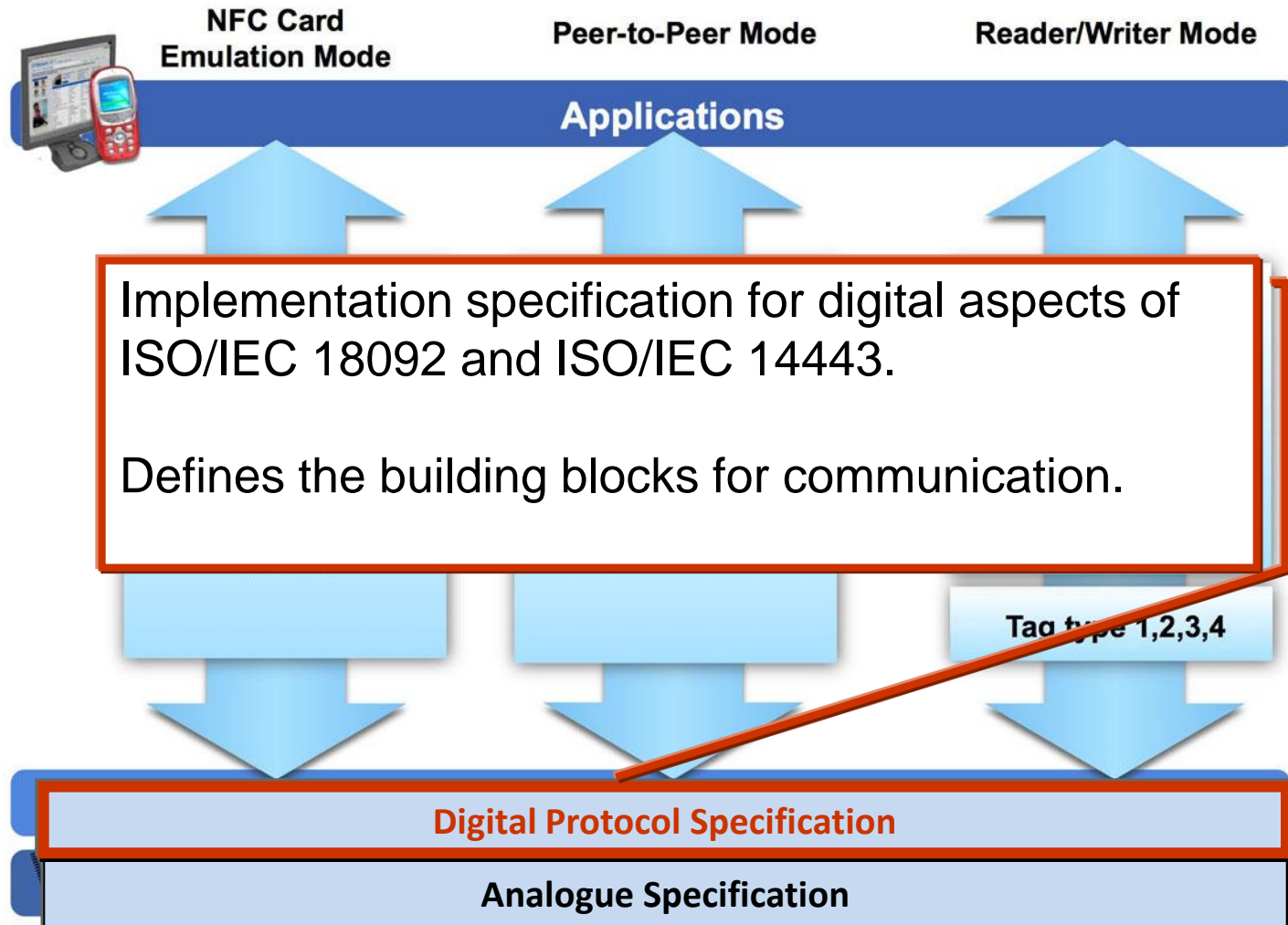
# NFC Forum Technology Architecture



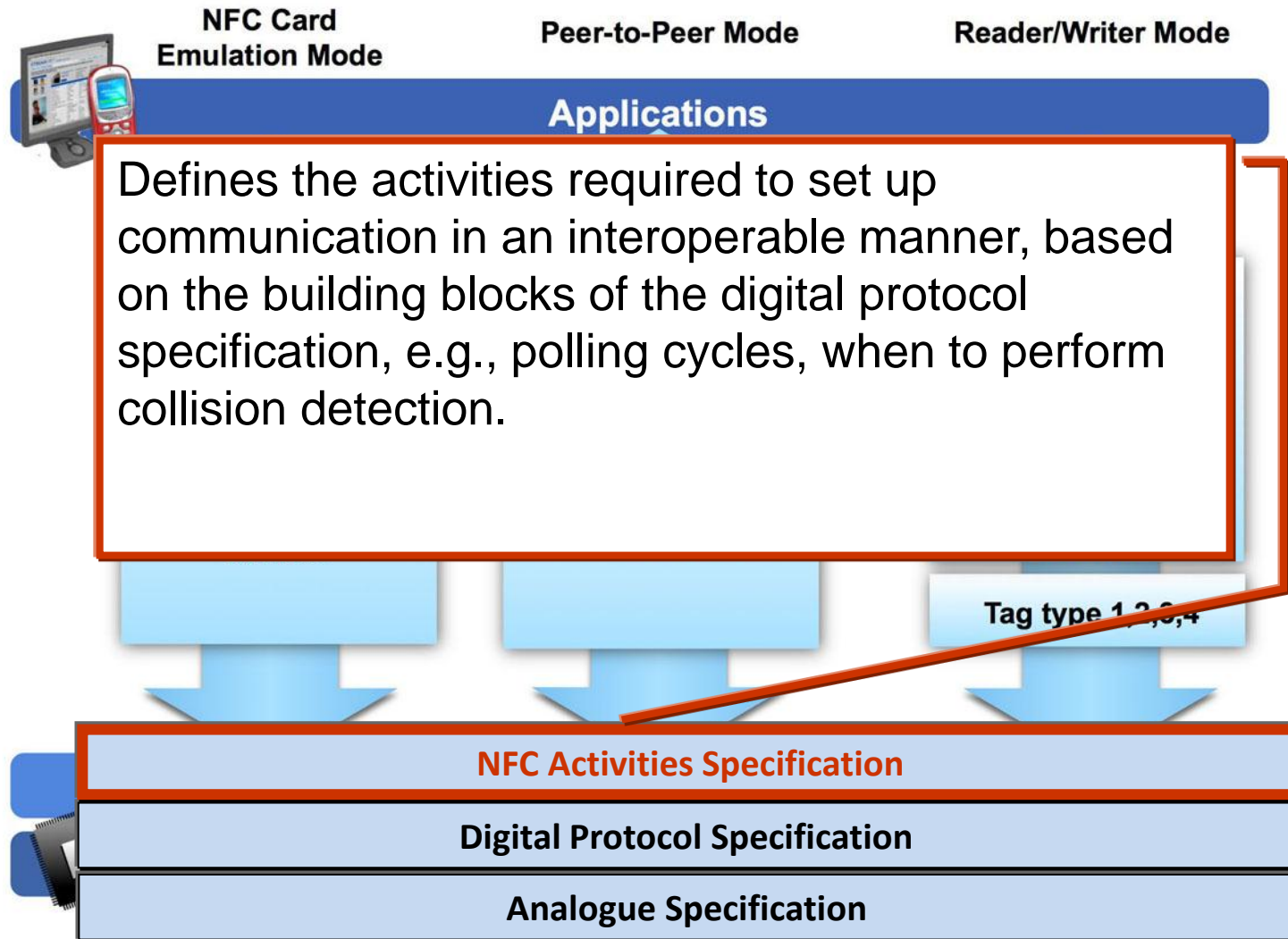
# NFC Forum Technology Architecture



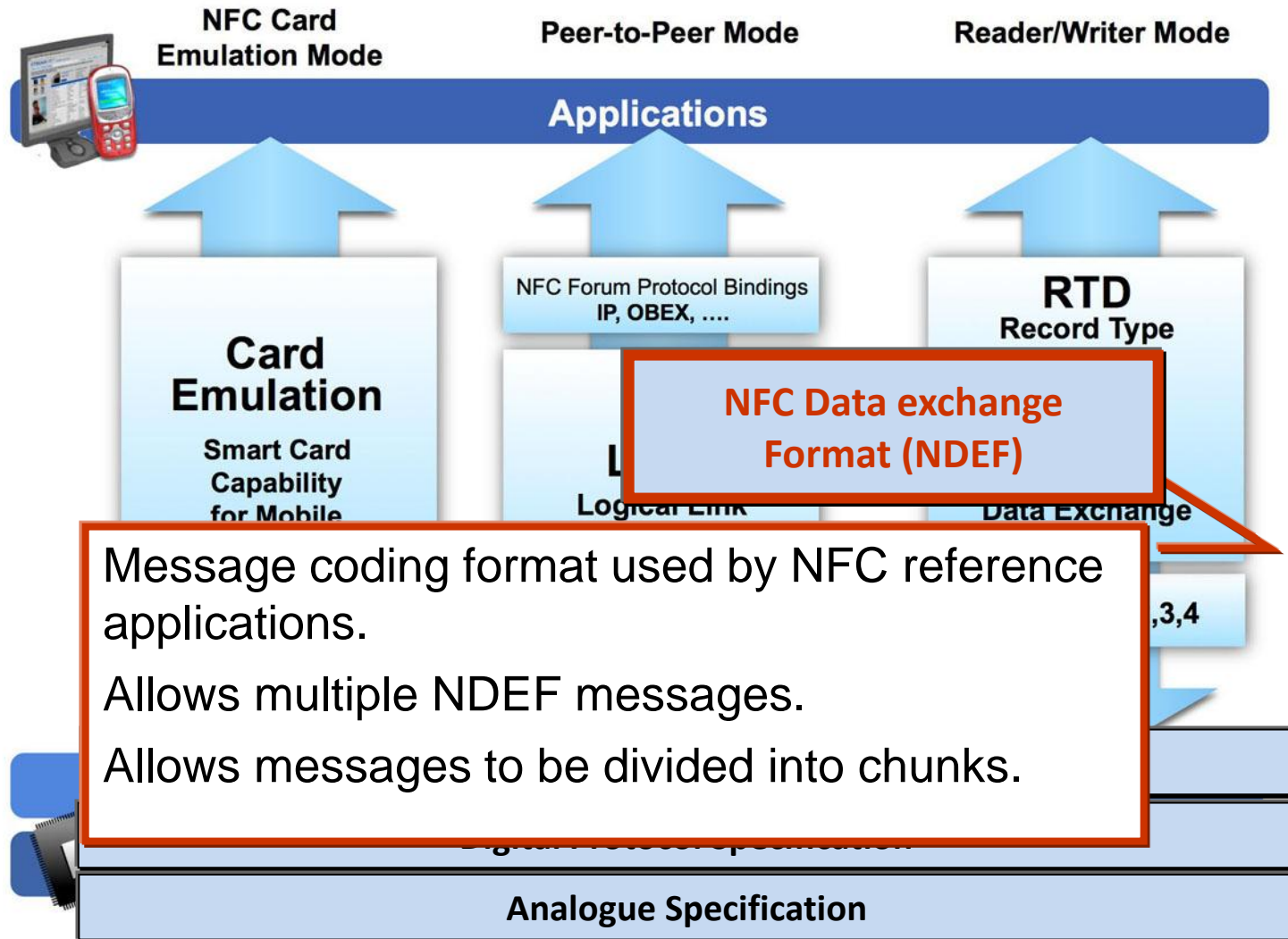
# NFC Forum Technology Architecture



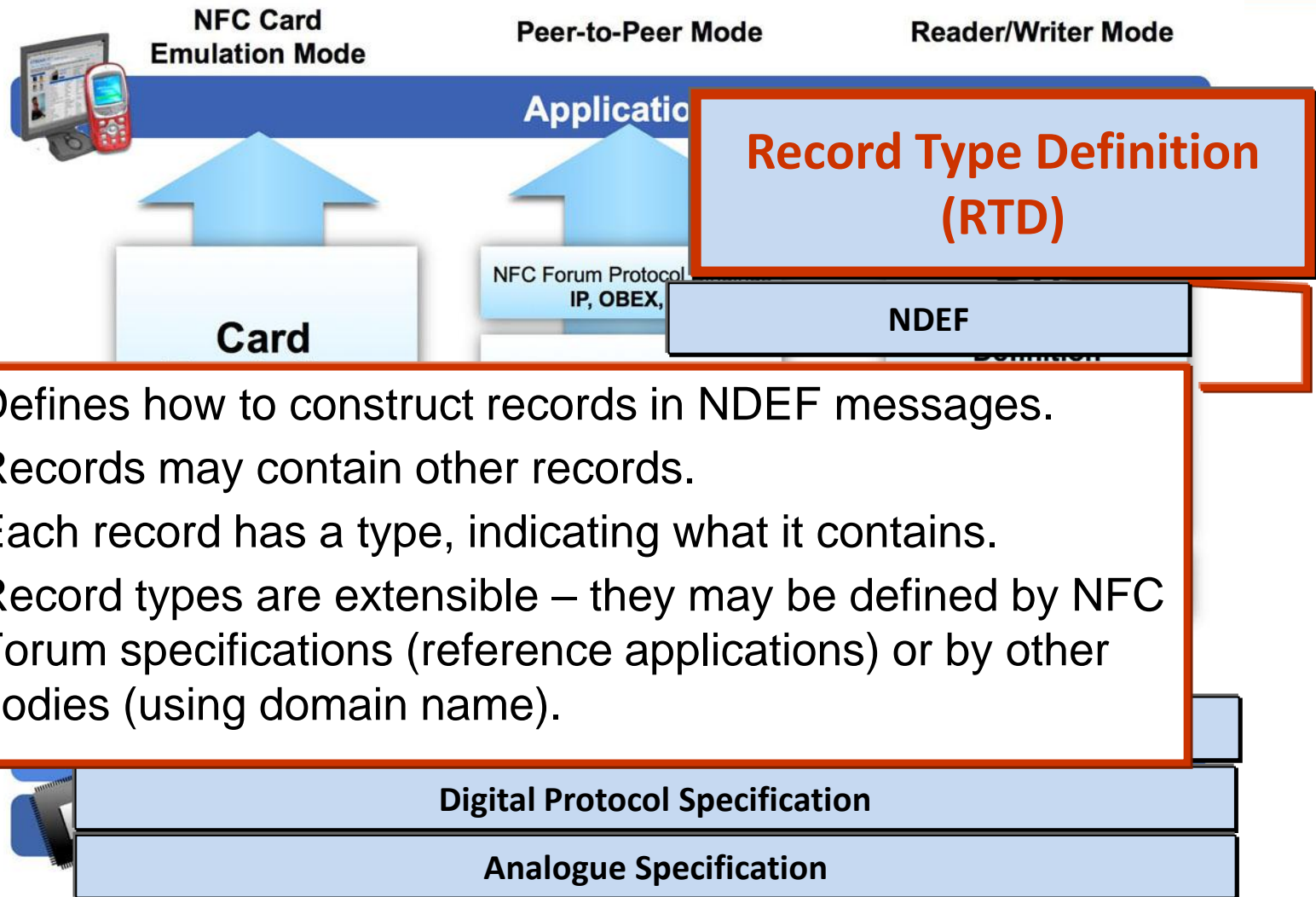
# NFC Forum Technology Architecture



# NFC Forum Technology Architecture



# NFC Forum Technology Architecture



## Record Type Definition (RTD)

NDEF

Defines how to construct records in NDEF messages.  
 Records may contain other records.  
 Each record has a type, indicating what it contains.  
 Record types are extensible – they may be defined by NFC Forum specifications (reference applications) or by other bodies (using domain name).

Digital Protocol Specification

Analogue Specification

- Likely to focus on enhancements with characteristics that overlap significantly with existing NFC Forum specifications:
  - Support a significant business need
  - Include features relevant to some part of the overall solution architecture
  - May reference external specifications (existing or in development)
  - May include support for verticals (e.g., application profiles)
  - Many possibilities such as new protocols, improved coexistence with other wireless technologies, improved integration with supporting technologies
- Closer alignment with other organizations that are related to NFC