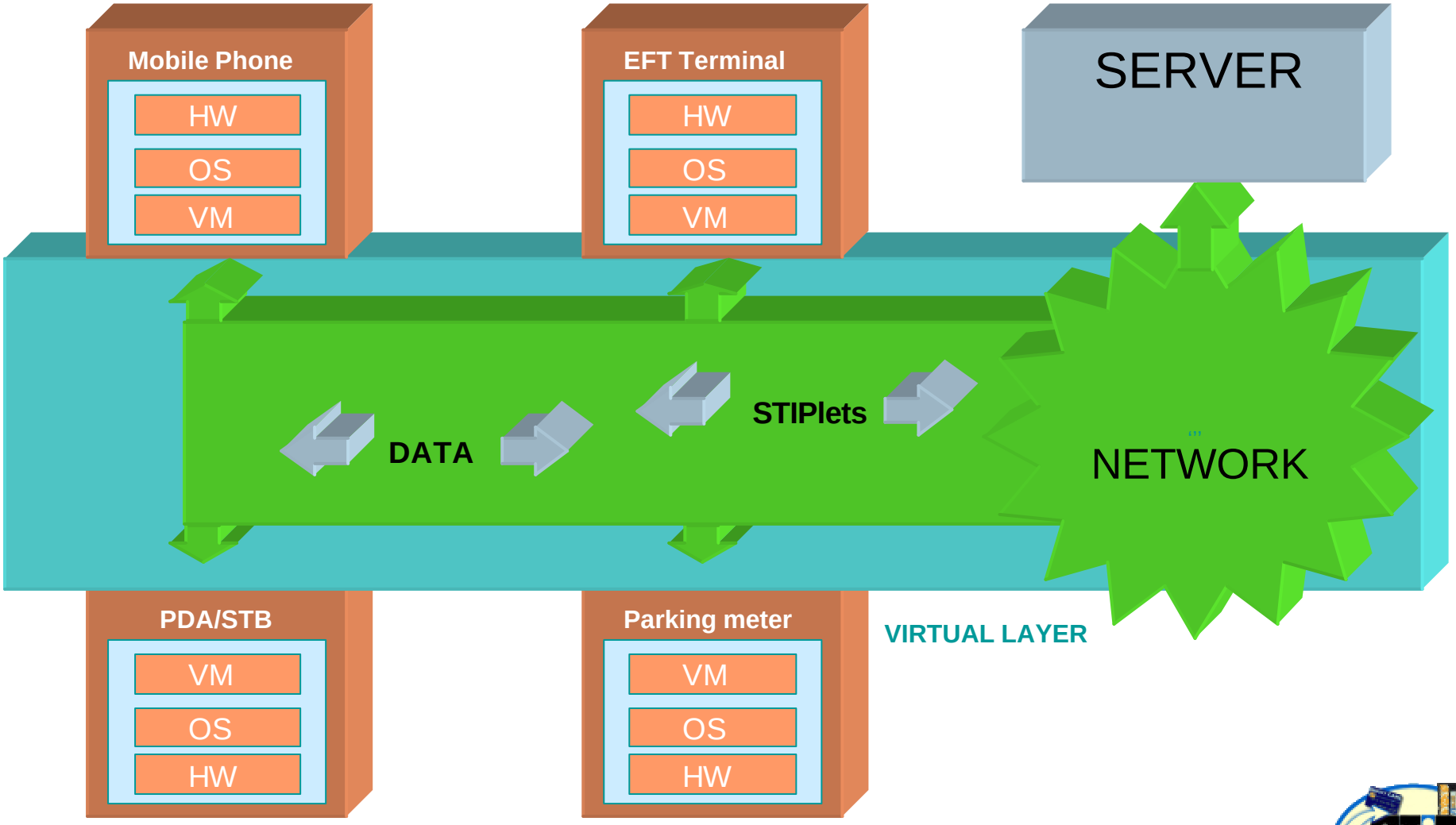
# STIP

# Presentation

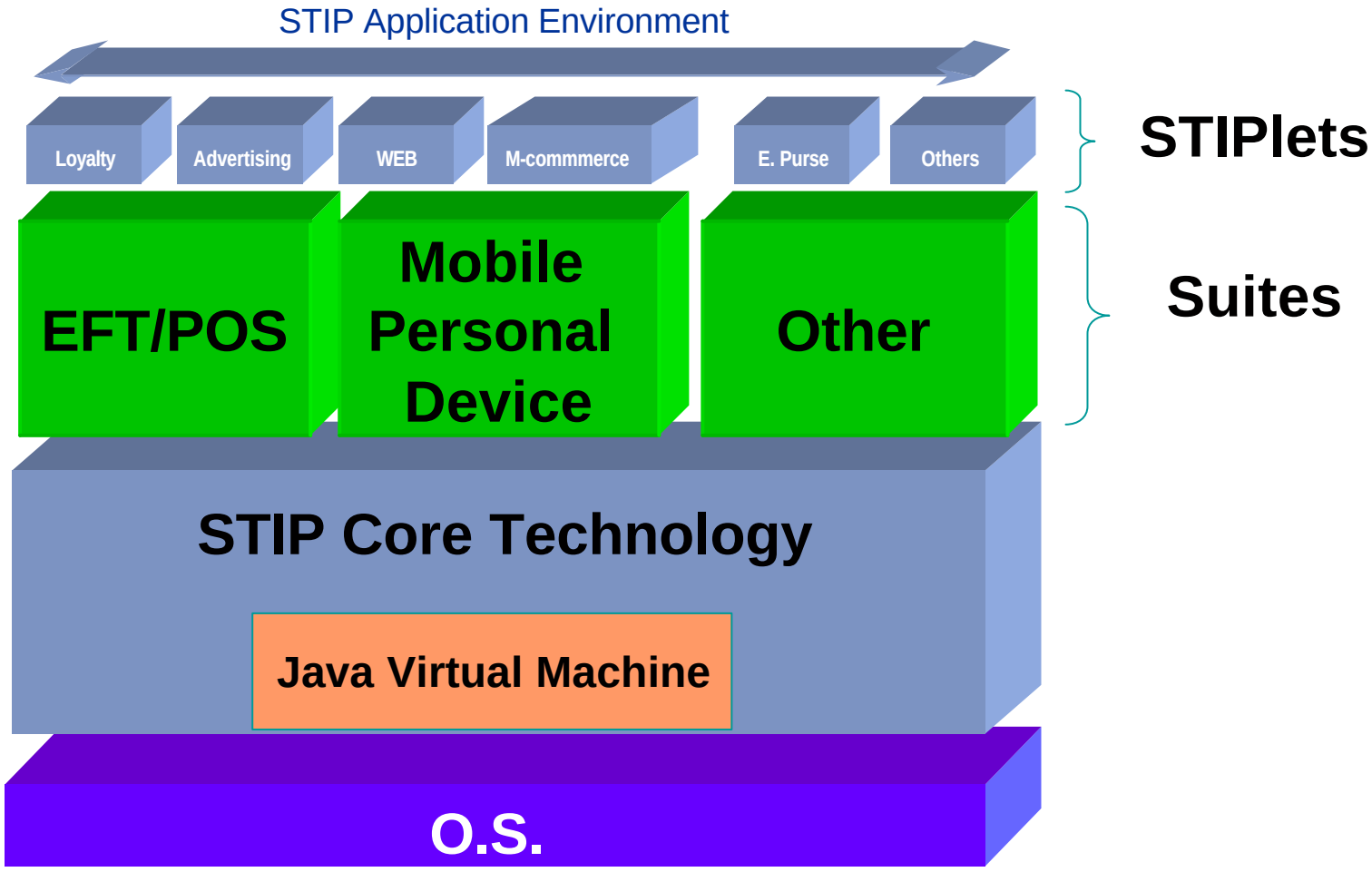
**Jerome Azema -** Texas Instruments (j-azema@ti.com)

**www.stip.org**

# Interoperability Vision



# What is STIP technology?



# STIP: Who is who

***Device Makers***

***Smart card Makers***

Trusted Logic

VeriFone

Cardsoft

THALES

SchlumbergerSema

STIP Consortium

GEMPLUS

ingenico

Texas Instruments

***Software Providers***

***Chipset Makers***

# STIP history

- **1999 :** Genesis in JavaCard Forum

- **2000 :** Consortium creation & Release 1.0 (March)

- **2001 :** Release 2.0 (April).
  Technology integrated into FINREAD

- **2002 :** STIP reorganization:

  - Core Technology

  - Industry-specific Suites (EFT/POS, Mobile Personal Device)

  Integrated into GlobalPlatform Device Framework

- **Onwards:** Evolve into a secure and rich multi-industry framework…

# STIP Features

- Support of secure transaction applications
- Interoperability
- Platform with limited resources
- Application life cycle management
- Designed to receive security certification
- Multi-applications (simultaneous execution and firewalling)
- Open to smart card accepting devices
- Coexistence with legacy applications

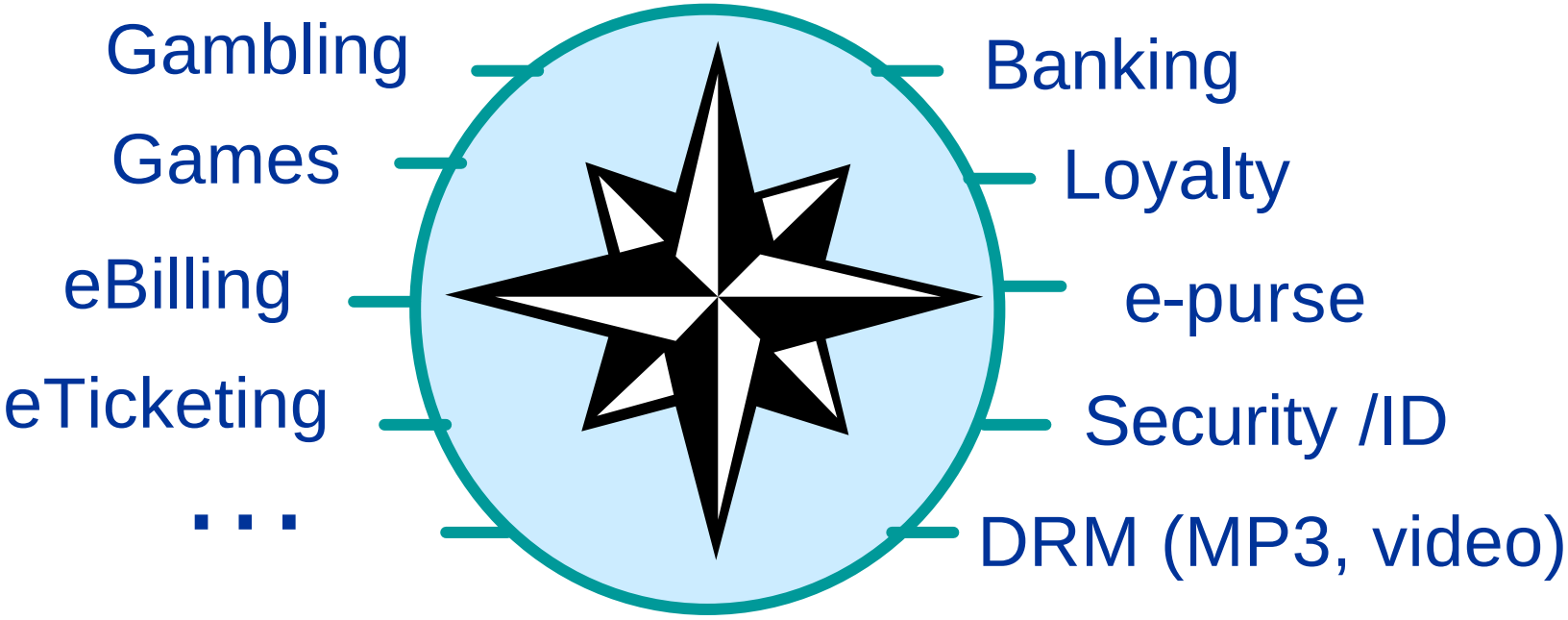
# Guiding principles

- Meet existing security, cost and performance expectations
- Open to other industry initiatives based on public standards
- Do not preclude vendor differentiation and innovation
- **STIP is an open and royalty free specification**

# Deliverables

- Specifications 2.1:
  - STIP Core Technology Specification
  - EFT/POS Suite
  - Mobile Personal Device Suite
- STIP application samples
- Test suites
- Reference implementation

# Business Requirement: A Secure Framework



# Business Requirement: Industry Targets

- Mobile Phones
- PDAs
- Set top boxes
- Home banking terminals
- EFT/POS terminals
- Payphones
- Parking Meters
- Mass transit terminals
- Vending Machines

# STIP

# Technical Overview

# Functional Requirement: Application Life cycle management

## Management

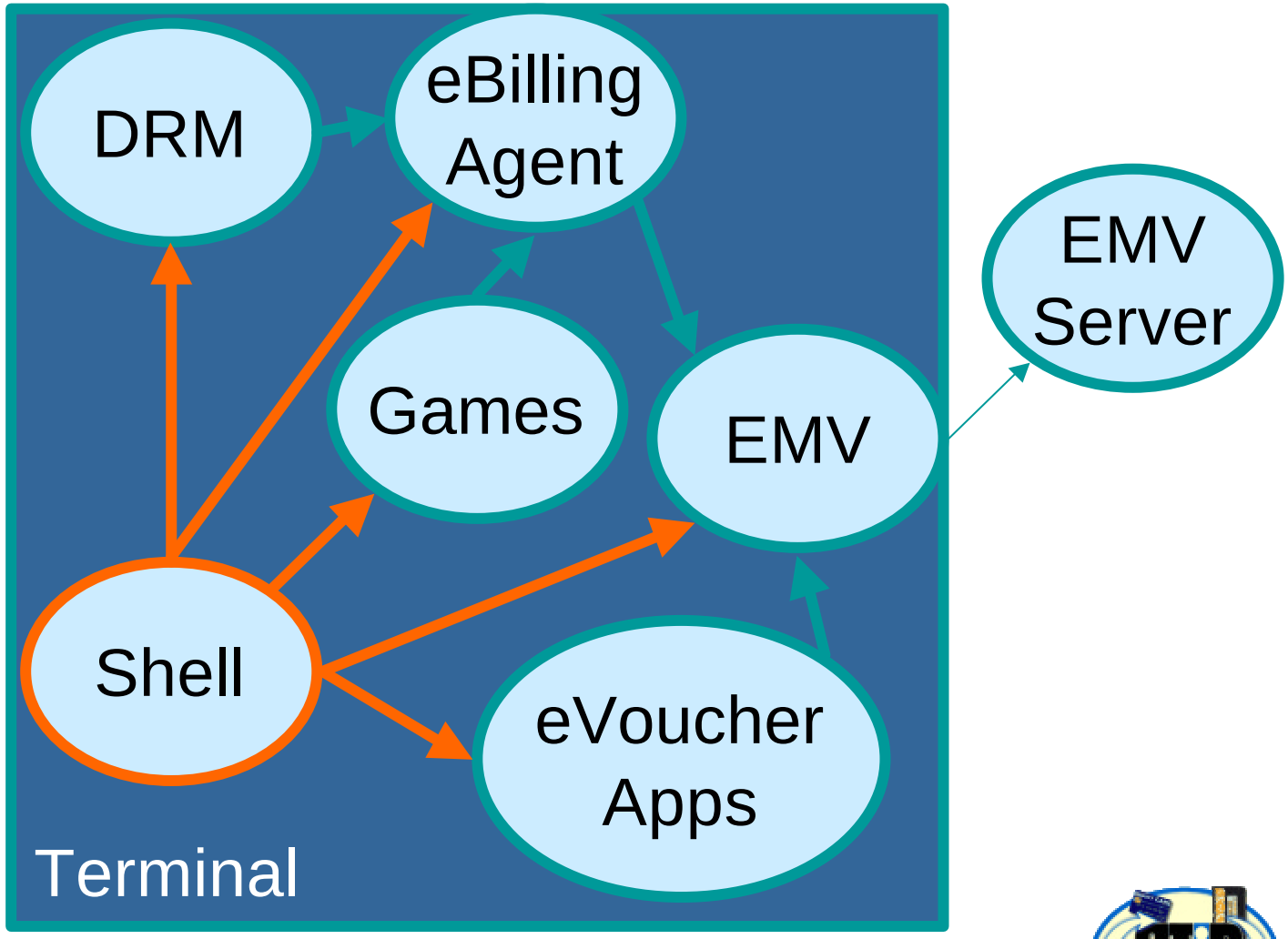
- Firewalling
- Download (distribution format)
- Authentication

## Activation

- Initialization
- Installation
- Registration
- Selection mechanism

# Functional Requirement:
## Cooperative Multi-application Framework

- Distributed applications
- Inter applications communication



# Functional Requirement: Security

- Security must be ensured :
  - Within a distributed and multi-applications environment.
  - To ease security Certification,
  - To keep the confidence of the end users

- The security must be considered globally :
  - Application management and activation
  - Dynamic application permission control
  - Firewalling (between applications, data storage)
  - Cooperation between applications

# STIP Model

- All resources accessed as asynchronous services
  - STIP is an event driven model
  - STIP application uses only a single thread
  - Services can be transparently remote
- STIP is designed to run within a multi-application environment
  - Exclusivity of service access
  - Secure control of rights

# STIP Existing Services

- Network Connections (sockets-based):
  - GSM, SMS, GPRS, EDGE, UMTS, …
  - Irda, USB, …
  - Bluetooth
- Cryptography
- XML browser (display, keyboard, printer)
- Communication means (modem, serial)
- Secure File Management
- User Identification
- Smart card reader
- Beeper, LED
- Power Management
- Date
- Timers
- Magnetic stripe reader

# Mobile Personal Device Services

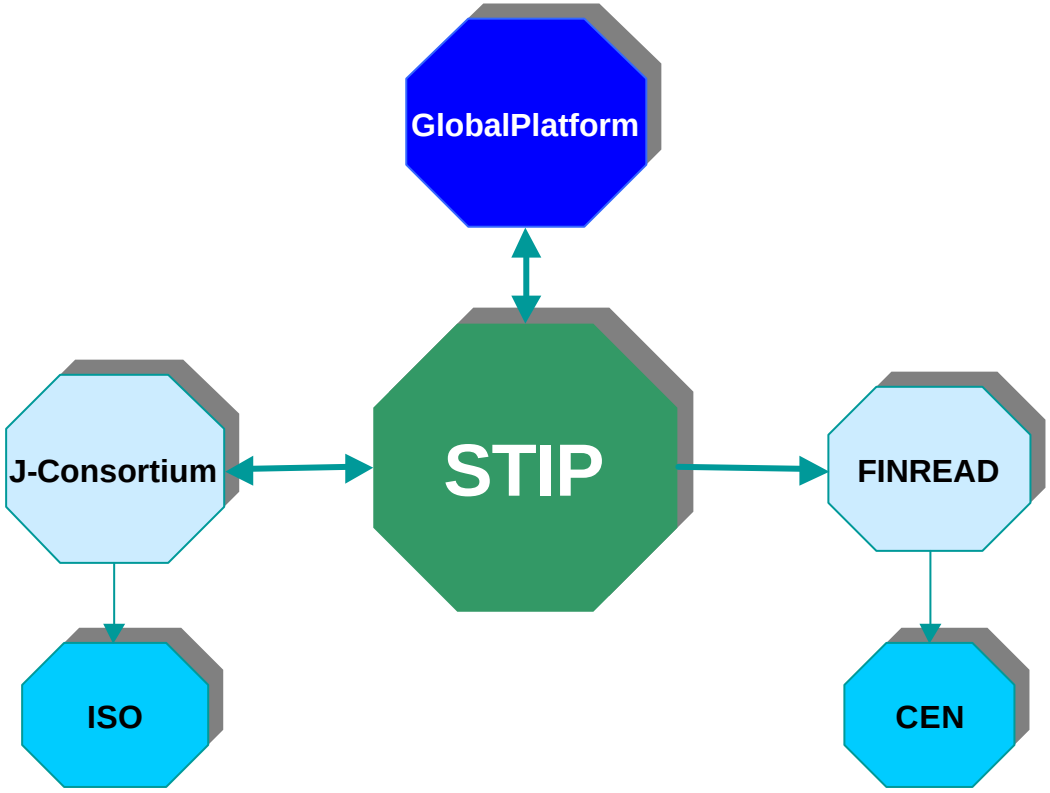
The Mobile Suite is a subset of already existing services:

- **Network, Crypto, UI, Communication means, File, User Identification, Smart Card, Beeper, Led, Power, Date, Timer**

The Mobile Suite is adding following services:

- **Mobile Telephony (Telephone basic API, MMI)**
- **Sound (tone, melodies, audio, volume)**
- **Voice (memorization, recognition, synthesis)**
- **Video (MPEG, AVI)**
- **Geo Location**
- **Game**
- **File Transfer Protocols**

# Industry Initiatives



# J-Consortium

## **JEFF™** File Format

- JEFF has been specified by the J-Consortium (www.j-consortium.org).
- JEFF is an ISO standard (ISO/IEC IS 20970).
- STIP recommends JEFF (Java Executable File Format) for on platform execution.
- STIP recommends the use of JEFF like a container to distribute the STIPlets and binary data (icons, pictures, MP3, …).

# FINREAD

- **Scope?**
  - Intelligent Smart card Readers with display and keyboard (pinpad) connected to PC for home-banking and e-commerce
- **What?**
  - Java API based on STIP Technology
  - (http://www.cenorm.be/isss/workshop/finread/documents/default.htm)
- **Why?**
  - Provide security in financial transactions (PIN processing, amount validation)
- **Who?**
  - European Payment Systems (Visa EU, Europay, Interpay, GIE Cartes Bancaires) and Banks

# GlobalPlatform

- Scope
  - All kinds of smart card acceptance devices
- What?
  - A Java high-level API on top of STIP technology, to write device application interoperable kernel.
- Why?
  - Need to write separately application logic kernel and customization

# GlobalPlatform Members

ASPECTS
ACI
ignite BT
bell id
CARDS ETC
GEMPLUS
FIRST DATA
Our Clients. Our Responsibility.
HYPERCOM
DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA
Datacard Group
DNP
HITACHI
IBM
Infineon technologies
InterPay Complete Payroll Solutions
Industrial Technology Research Institute
Matsushita Electric Industrial Co Ltd
ingenico
JCB
NETS Network For Electronic Transfers (S) Pte Ltd
NEC
NBS
KEYCORP
NTT
Oberthur Card Systems
ORGA The Smart Card Integrator
PHILIPS Semiconductors
MasterCard
Proton World
Nmda
SERMEPA
SmartTrust
SmartGov
Schlumberger
THALES
TOPPAN
Scotiabank
Sun microsystems
TSYS TOTAL SYSTEM SERVICES, INC.
TOSHIBA
Telstra
VISA
STP Consortium

# STIP

## For further information:

**www.stip.org**

**info@stip.org**