



# MIPI Alliance Overview

**ARM**<sup>®</sup>

**NOKIA**



 **TEXAS  
INSTRUMENTS**

# **Mobile Industry Processor Interface (MIPI) Alliance**

## **Accelerating Adoption of Application-Rich Mobile Devices**

### **THE MIPI ALLIANCE:**

- A formal not-for-profit corporate entity founded by ARM, Nokia, ST, and TI.
- Evolved from the OMAPI Standard established by ST & TI in 2002.
- Tiered membership enables many companies to contribute and benefit.
- Intended for wide adoption: seeking 100's of member companies.
- Complementary to other industry bodies such as 3GPP and OMA.

### **THE MIPI STANDARD:**

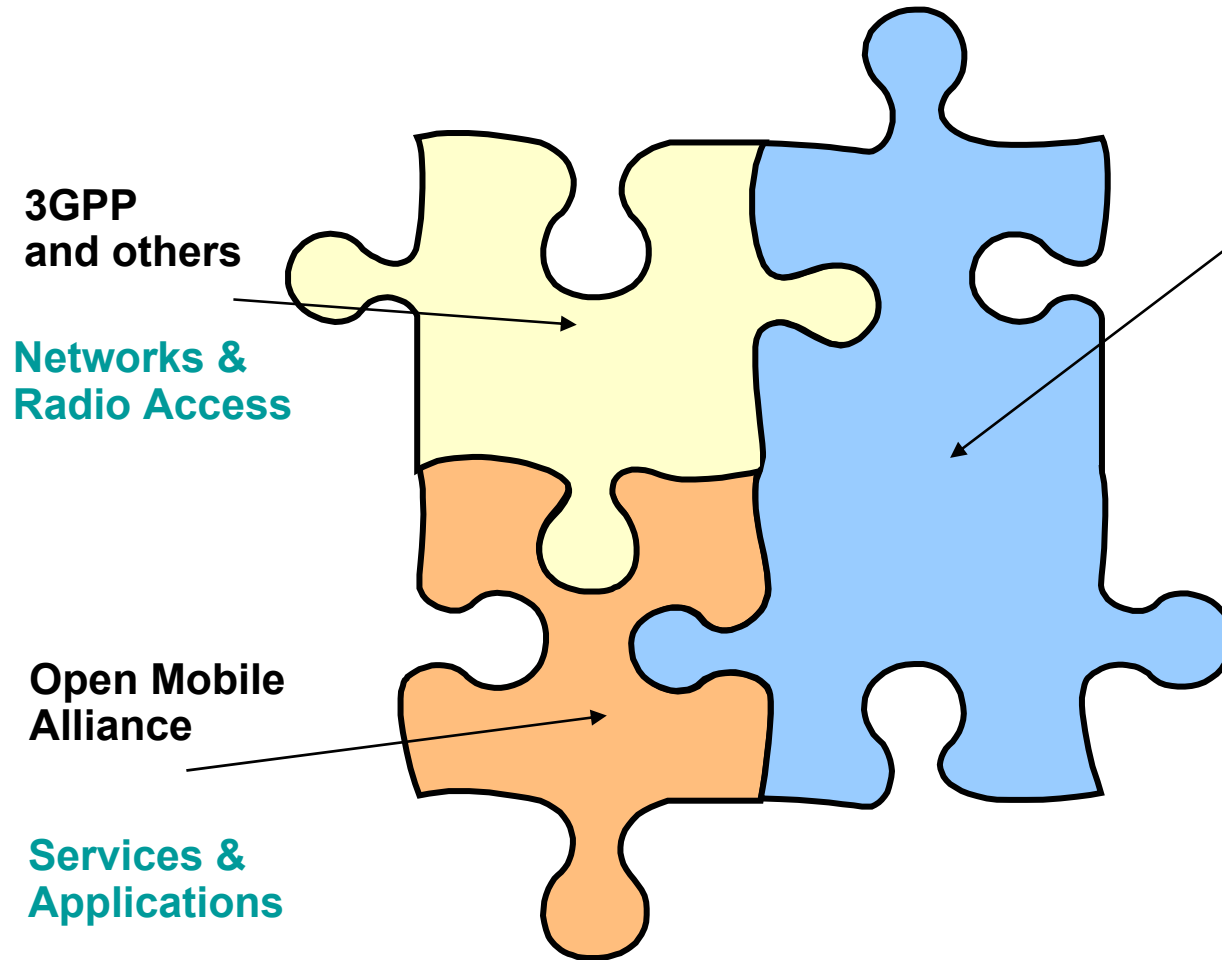
- Open standards established thru collaborative definition of hardware and software specifications.
- MIPI 1.0 Standard to be available in 4Q03.  
Impact to mobile application processors, peripherals, and software.

### **THE MIPI OBJECTIVE:**

- *Promote faster and broader adoption of mobile computing devices by establishing open standards for mobile application processor interfaces.*

[www.mipi.org](http://www.mipi.org)

# Standards in the Mobile Industry



## Processor Interface Standards Co-defined by:

- Mobile device manufacturers
- Processor suppliers
- Peripheral IC suppliers
- Camera and display suppliers
- OS suppliers
- Software application suppliers
- Memory IC suppliers



# Significance of the MIPI Standard

## For Component Suppliers

- Better industry alignment on physical interfaces between processors and peripheral devices
- Broader spectrum of hardware and software solutions to complement each vendor's products
- Rapid definition and adoption of new interfaces to meet evolving system requirements

## For OS Vendors

- Common hardware and software interfaces provide standard view toward the OS
- Maximum reuse & commonality in the OS port
- Better predictability of processor capabilities to enable processing intensive applications

## Mobile Device Manufactures

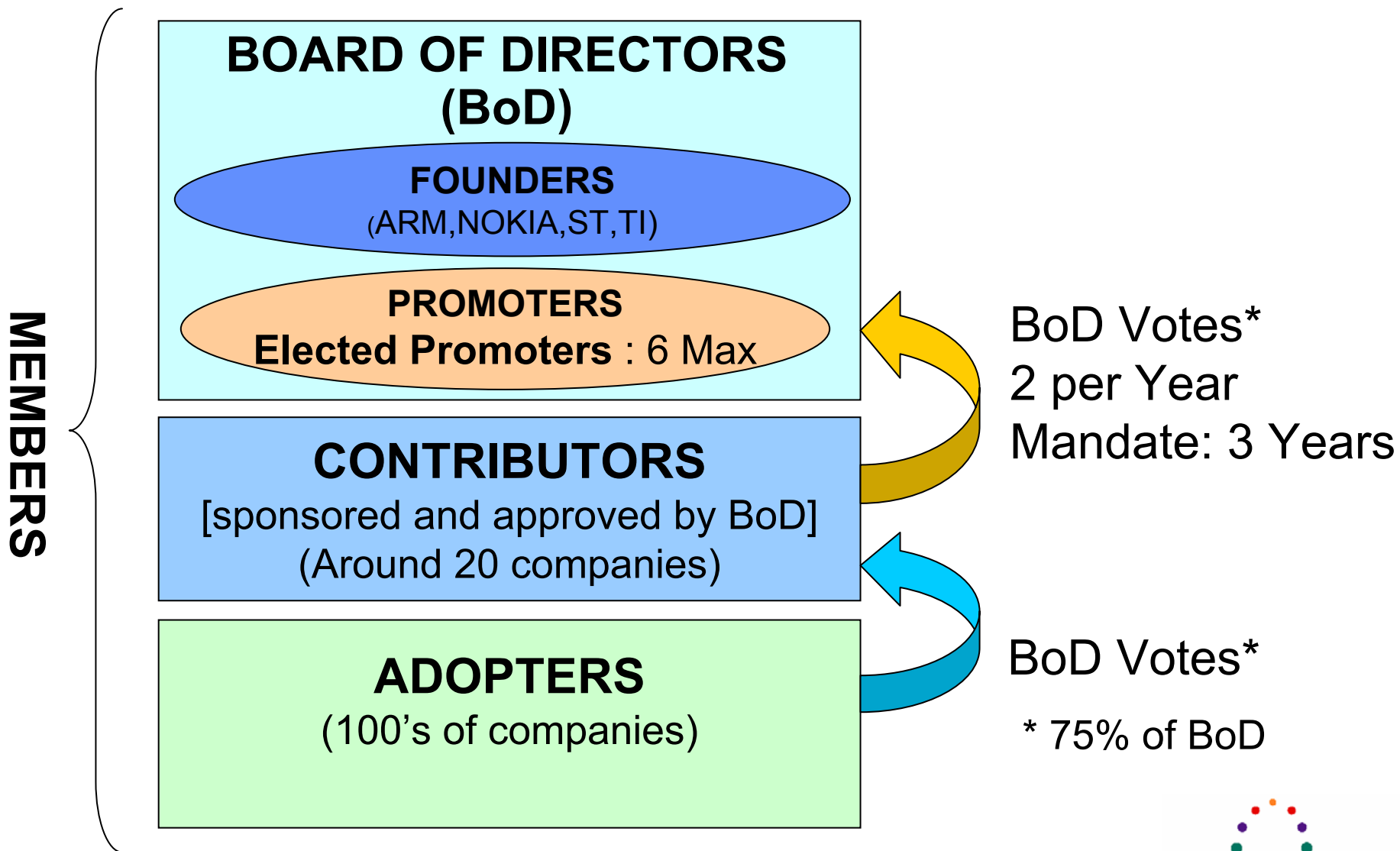
- Rapid innovation & improved time to market by reducing system design complexity
- Maximum application software portability due to common hardware & software interfaces
- Wider availability of optimized peripheral devices like LCD's, Cameras, and Comms ICs

## For Software Developers

- Consistent and predictable access to media acceleration resources
- Increased market potential since applications can run on multiple platforms
- More consistent development tool chains

**Openness and standardization  
will fuel market growth**

# Membership Structure



# Member Benefits

BoD

<b>Benefits</b>	<b>Promoter &amp; Founder</b>	<b>Contributor</b>	<b>Adopter</b>
Usage of specification in products	Yes	Yes	Yes
Ability to use marks in marketing and on products	Yes	Yes	Yes
Working groups - can be elected as chair	Yes	Yes	No
Working groups - seat on a working group	Yes	Yes	note1
Access to draft specifications at version v0.95	Yes	Yes	Yes
Access to early draft specifications at version v0.5	Yes	Yes	No
Voting seat on board, 75% approve final specification	Yes <sup>3</sup>	No	No
Annual membership Fees – note 2	\$50k	\$40k	\$10k

Note 1: could have voting seat within working group if invited by the board

Note 2: Companies with revenues of below \$250m per year get 50% discount

Note 3: Promoters are elected for 3 years, Founders are permanent on board

# MIPI Working Groups

	Name	Areas of Impact	Chairperson
1	General Interfaces	USB OTG, IrDA, I2S, I2C, UART, Audio, SPI, etc	Contributor TBC
2	System Power Management	Power management , clocking ..	<b>TI</b>
3	Memory Interface	SDR/DDR-SDRAM, Flash, SRAM, ROM, MMC, SDIO, etc	Contributor TBC
4	High-speed Multipoint link (HML)	Potential new bus definition for multiple peripherals, links to External Interfaces and Camera interface, SSI (to evolve)	<b>ARM</b>
5	Software	Software abstraction for multimedia; HW resource mngt	<b>ST</b>
6	Camera & Display	Interfaces to LCD panels, cameras, etc, MeSSI, CCP	Contributor TBC
7	Marketing	Promotion of MIPI; marketing communications; collateral; logistics for external events;	<b>Managing Director of MIPI</b>
8	Test & Debug	Debug & trace interfaces, JTAG, etc. XTI, ETM	<b>NOKIA</b>
9	Compliance	Coordination of MIPI compliance requirements/tests/etc.	Contributor TBC
10	Security	Trusted platform	Contributor TBC

# IPR Policy

- Essential IP for MIPI standards (Interfaces not implementations)
  - must be licensed royalty-free and automatically to all MIPI Members
  - no requirements for disclosure
  - commercially reasonable as test for essentiality of IP
  - no background IP (such as semiconductor process or processor architecture) is included as essential
- Member withdraws from MIPI Alliance
  - within 60 days of withdraw must disclose essential IP of draft specifications
  - maintains a license to use the MIPI specifications & trademarks approved prior to withdraw from the MIPI Alliance
  - must license essential IP royalty-free and automatically to all Members and future members, for MIPI specifications approved prior to leaving the Alliance
  - has no rights to use MIPI specifications and trademarks approved after member leaves the Alliance
- Please see the MIPI Alliance membership & bylaws on [www.mipi.org](http://www.mipi.org)

# Timescales

- December 2002
  - ST & TI form OMAPI
  - Work starts on broadened and formalizing OMAPI
- July 2003
  - ARM, Nokia, ST & TI incorporate MIPI Alliance Inc.
  - Press release of MIPI Alliance
    - Founders, working groups, Structure, IPR policy
  - Adopters and Contributors are invited to join
- September 2003
  - Press release with Contributor and Adopters
    - Description of working groups and chairperson
- 4Q2003
  - MIPI v1.0 Spec is published on the web for Adopters
- 2004
  - MIPI v2.0 Spec is published on the web for Adopters