

# Indo-European dialogue on ICT standards & Emerging Technologies

*(Growth, Profitability & Nation Building)*  
13-14th March 2014 • New Delhi, INDIA

IN THE FRAMEWORK OF

Project

# SESEI

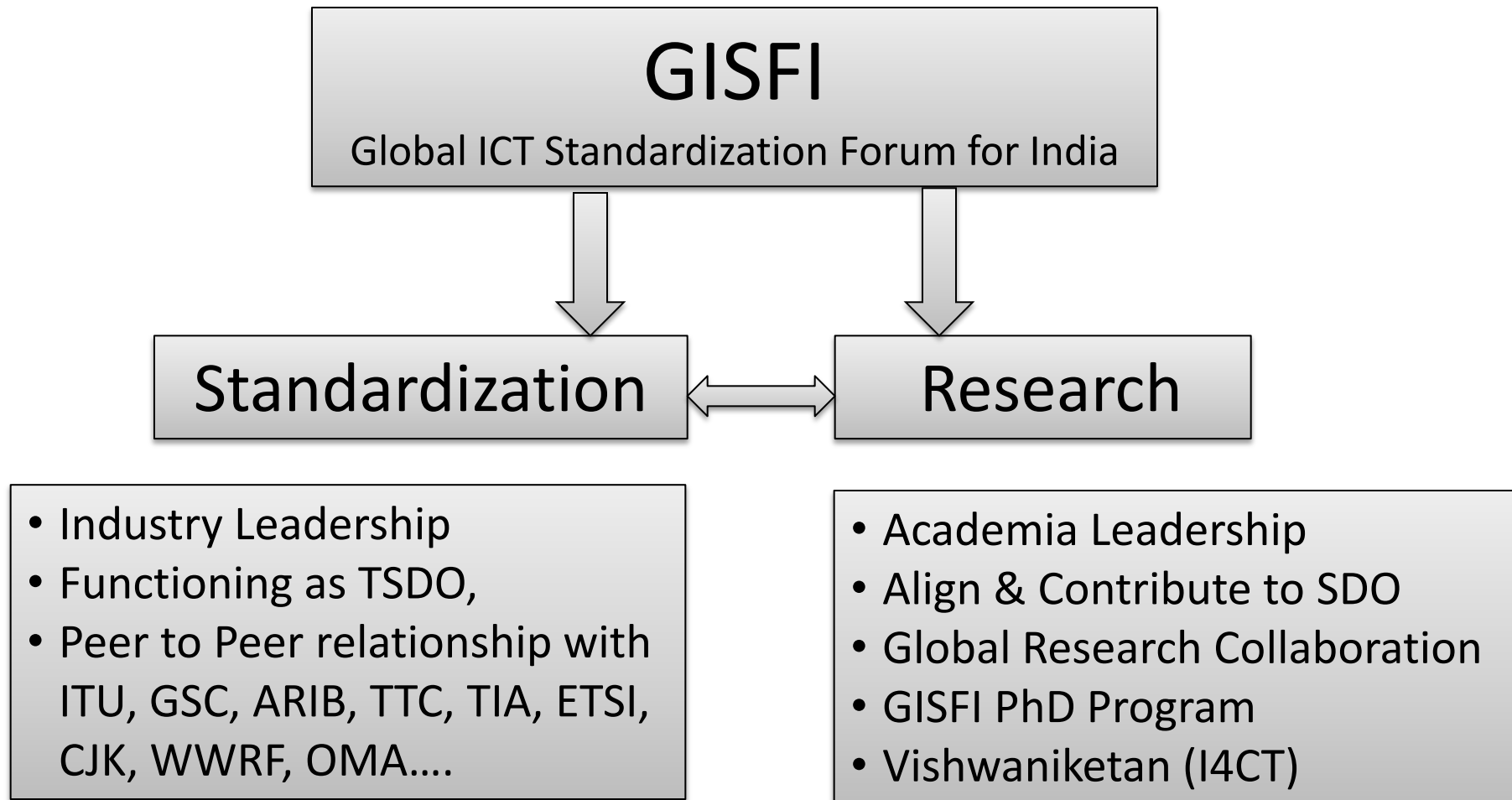
<http://eustandards.in/>



## GISFI & 5G DEFINITION PROGRAM

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# INTRODUCTION



# OVERVIEW

1. OPERATIONAL SINCE 2009
2. THIN, BUT STRONG  
STANDARDIZATION EXPERTISE
3. SUCCESSFUL IN SETTING UP  
STANDARDIZATION THEME IN INDIA
4. ALIGNED WITH NATIONAL TELECOM  
POLICY (NTP-12) AND PROMINENT  
NATIONAL PROGRAM
5. INDIA SPECIFIC SPECIALIZATION  
KEEPING ALIGNED WITH GLOBAL  
SDOs & REQUIREMENTS
6. EFFECTIVE PLATFORM FOR  
TECHNOLOGY INNOVATIONS LED  
STANDARDIZATION

S.No.	Working Groups
1	Future Radio Network & 5G <i>[i2TB]</i>
2	Green ICT <i>[CISCO]</i>
3	Internet of Things <i>[TCS]</i>
4	Security & Privacy <i>[NEC]</i>
5	Cloud & Service Oriented Network <i>[NIKSUN]</i>
6	Special Interest Group <i>[HUAWAI]</i>
7	Spectrum <i>[FORMER GOVT]</i>



# ORGANIZATIONS THOSE CONTRIBUTED/ SUPPORTED GISFI INITIATIVE AT SOME STAGE

- TCS
- VNL
- Tejas Networks
- CMAI
- NIKSUN
- NEC
- Motorola
- NSN
- HUAWEI
- Samsung
- VERISERVE
- GIOT
- WIP Labs
- IIT- Hyderabad
- IIIT-Allahabad
- Rajiv Gandhi University of Knowledge Technologies, Hyderabad, India
- Sinhgad Technical Education Society
- HMR Institute of Technology and Management
- Birla Institute of Technology
- Individual members from industries, operators and academia

## Collaborators and Supporters

- TEC, DoT, Government of India
- TEMA
- ITU-T
- ETSI
- ARIB
- TTC
- TIA
- WWRF
- IEEE in process
- GSC (invited as observer in China and Canada)
- CJK (invited as a participant in Japan)
- OMA





# GISFI OBJECTIVE

1. To enable India to be dynamic knowledge based economy able to compete globally
2. To create solutions for societal trust & security by having nationally standardised ICT environment
3. To ensure that national ICT policy implementation is aligned to the global state-of-the-art, in particular with major trading partners (USA, Europe, China, Japan, ... )
4. GISFI is already implementing both Indian and global standardisation policies:
  - By basing its work on the Indian Governmental policy
  - By cooperating with international standardization organizations



# INDIA'S GRADUATING ROLE IN VARIOUS MOBILE NETWORK GENERATIONS

MOBILE NETWORKS	DEFINITION	DEVELOPMENT	DEPLOYMENT
2G	NOT EVEN AWARE	C-DOT (1997) VNL(2004) DESIGN SERVICES	8-10 YEARS LATE ADOPTION
3G	AWARE, NO PARTICIPATION	C-DOT (2000) DESIGN SERVICES	6-8 YEARS LATE ADOPTION
4G	PARTICIPATED IN ITU	CDOT, TEJAS, AZCOM, MNC, START-UPS	VERY EARLY ADOPTION
5G	WILL LEAD THE DEFINITION AS EQUAL PARTNER	DEVELOP DURING THE DEFINITION STAGE	EARLY PILOT DEPLOYMENT



# GISFI 5G DEFINITION PROGRAM 1/2

- FOCUS ON INDIAN REQUIREMENT :
  - WHAT UNSOLVED PROBLEM CAN BE SOLVED WITH THE HELP OF THE EMERGING TECHNOLOGY
  - REQUIREMENT DIFFERENTIATION
  - CONVERT THESE DIFFERENTIATED REQUIREMENTS INTO ENGINEERING REQUIREMENTS FOR ADDRESSING THEIR SOLUTION BY GLOBAL EXPERTS
  - ASSESS WHAT NEW REQUIREMENT (SYSTEMS/SOLUTIONS) BE MET BY CURRENT TECHNOLOGY BUILDING BLOCKS AND NETWORKS
  - ASSESSMENT OF NEW RADIO ACCESS TECHNOLOGY
  - DEFINE, DEVELOP PROOF OF CONCEPTS AND PILOT WITH EXISTING TECHNOLOGY BUILDING BLOCKS AND SETS THE CLEAR PERFORMANCE/CAPACITY OBJECTIVES FOR THE NEXT GENERATION TECHNOLOGY BUILDING BLOCKS
- COLLABORATION WITH ALL ONGOING GLOBAL DEFINITIONS EXERCISES IN SDOs (ARIB, TTC,ITU,ETSI) AND RESEARCH (WWRF, METIS, UNIVERSITIES IN US AND EUROPE)



# GISFI 5G DEFINITION PROGRAM 2/2

- RESEARCH AND PRODUCTS/SERVICE INNOVATION DRIVEN STANDARDIZATION
- PROVIDE PLATFORM FOR PATENTS BASED RESEARCH AND FORMATION OF TECHNOLOGY STARTUP TO ACHIEVE TECHNOLOGY SELF-RELIANCE
- CLOSE COLLABORATION WITH INDIAN RESEARCH AND DEVELOPMENT (Government /Private) INSTITUTIONS (CDOT, CDAC, TEC, DOT, DIET, PLANNING COMMISSION, IITs/IISc)
- INTEGRATE AND SUPPORT IMPLEMENTATION OF PROVISIONS OF NTP-12
  - FINANCIAL & ADMINISTRATIVE SUPPORT FOR RESEARCH, STANDARDIZATION, INNOVATIONS, TEST LABS & ENTREPRENEURSHIP
- CLOSE COLLABORATIONS WITH GLOBAL RESEARCH, ENTREPRENEURS, INVESTORS & NEW TECHNOLOGY PRODUCT BUYERS
- TARGETS DURING NEXT 5 YEARS : 200 PhD, 500 M.Tech PROJECTS, 100 PATENTS, 20 SUCCESSFUL TECHNOLOGY START UPS AND 10000 Expert Category HUMAN RESOURCES GENERATION.





# 5G REQUIREMENT & TECHNOLOGY COMPONENTS

- COMMON EXPECTATION:
    - INCREASED VOLUME DENSITY (1000X),
    - INCREASED THROUGHPUT (100X)
    - DECREASED LATENCY (mS)
    - INCREASED CONNECTED DEVICES (100X)
    - INCREASED VARIETY OF DEVICES
  - EVOLVED LTE AND NEW RADIO TRANSMISSION TECHNOLOGY FOR WIRELESS ACCESS
  - EVOLVED INTERNET TO SUPPORT HUGE NUMBER OF CONNECTED DEVICE (IoT, M2M)
  - SIMPLIFIED NETWORK ARCHITECTURES
  - ALL TELECOM INFRASTRUCTURE ON CLOUD (VIRTUALIZED NETWORK FUNCTIONS & SOFTWARE DEFINED NETWORKS)
  - ENERGY EFFICIENT
- NEW MODELS OF SERVICE DELIVERY AND COLLABORATIONS
  - GUARANTEED QoS/CEM:
    - PERFORMANCE,
    - RELIABILITY,
    - AVAILABILITY, &
    - RETAINABILITY
  - COMPLETELY SECURE:
    - GUARANTEED PRIVACY TO USER
    - COMPLETE MONITORING (LAWFUL INTERCEPTION)
  - NEW DEFINITIONS AND COLLABORATION OF SERVICE PROVIDERS
  - NEW DEPLOYMENT STRATEGIES FOR PROVIDING WIRELESS COVERAGE
  - COST EFFECTIVE & SUSTAINABLE



# INDIAN PERSPECTIVE OF 5G NETWORKS

- BEYOND COMMONLY ASSESSED REQUIREMENTS:
  - INCREASED TRAFFIC VOLUME, HIGHER DATA RATE, INCREASED CONNECTED DEVICES & REDUCED LATENCY
- TECHNOLOGY AS CAREER GRADE SERVICE DELIVERY PLATFORM
  - TO DELIVER BASIC SERVICES TO THE CITIZEN IN RURAL AREAS WHERE QUALITY PHYSICAL INFRASTRUCTURE LIKE HOSPITALS, SCHOOLS, BANKS ETC DO NOT EXIST.
- PLATFORM MUST BE
  - AS RELIABLE, AVAILABLE, RETAINABLE AS PHYSICAL INFRASTRUCTURE
  - MANDATORY PART OF UNIVERSAL SERVICE OBLIGATION
- TECHNOLOGY IS CHOSEN VEHICLE FOR SOLVING ALL OUR UNSOLVED PROBLEM



# SERVICES EXAMPLES FOR 5G NETWORKS

- SURGICAL EMERGENCY OPERATION PERFORMED IN VILLAGE OR IN ICU/OT LIKE EQUIPPED AMBULANCE, REMOTELY BY AN EXPERT IN MAIN CITY
- REMOTE MEDICAL DIAGNOSIS LIKE “DOOT NADI PARIKSHAN OF AYURVEDA”
- SECURITY & SURVEILLANCE
  - SMART CITY MANAGEMENT, M-HEALTH
  - PUBLIC SAFETY & DISASTER MANAGEMENT
  - INDUSTRY AUTOMATION
- HUMAN & PHYSICAL RESOURCE IDENTITY MAPPING –VIOLATION DETECTION AND CONTROL
- INTERACTIVE QUALITY EDUCATION
- BANKING TO ALL
- GOVERNANCE, INFORMATION ACCESS, LAW & ORDER CONTROLS
- MONITORING & CONTROL OF FARM, DAIRY/ ANIMAL HUSBANDRY, PROCESS INDUSTRY



# THANKS FOR ATTENTION

## CONTACTS

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