

***Training Course of Railway Personnel
BIMSTEC and Mekong-Ganga
Cooperation Countries
20-31 March 2006***

Asian Highway Network Development

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Development of the International Highway Linkages: Issues and Challenges

- Standards and condition of infrastructure
- Maintenance and upgrading of infrastructure
- Financing development and maintenance of highway infrastructure
- Facilitation of border crossings
- Coordination among countries and agencies

Asian Highway

- **Conceived in 1959**
- **Revitalized in 1992; ALTID**
- **Goal: To promote regional cooperation/trade**
- **Criteria for identification of routes:**
 - **Capital to capital links**
 - **Industrial and agricultural centres**
 - **Sea, river and air ports**
 - **Container terminals & depots**
 - **Tourism attractions**
- **Maximize use of existing infrastructure**
- **Coordinated plan for development**

Formulation of the Asian Highway

141,000 km, 32 countries



- Legend**
- Asian Highway Routes
 - Potential Asian Highway Route
 - Ferry Link
 - Capital City

The designations employed and the presentation of material on this map do not imply the expressing of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The line in Kashmir has not been agreed upon by the parties.



UNITED NATIONS
2003

TIMOR-LESTE
Port Moresby

Intergovernmental Agreement

Turkey

- **Contracting Parties**
 - Adopt AH network
 - Negotiating procedures
 - Conform to AH design standards
 - Display AH signs
- **Working Group on the Asian Highway**
 - Provides negotiating forum
 - Proposals for revisions of network
- **28 member States have signed and 18 ratified, approved or accepted the Agreement**
 - Afghanistan, Armenia, Azerbaijan, Bhutan, Cambodia, China, Georgia, India, Japan, Mongolia, Myanmar, Pakistan, Republic of Korea, Russian Federation, Sri Lanka, Thailand, Uzbekistan and Viet Nam.
- **Agreement Entered into force on 4 July 2005**

Working Group on the Asian Highway

14-15 December 2005, Bangkok

- Correction to name of places in China (AH65) and Republic of Korea (AH1 and AH6)
- AH 48 in Bhutan extended to Thimphu
- Some Changes in itinerary in Uzbekistan, AH7, AH63 and AH65
- Official Focal and Contact Points
- Update status of Asian Highway for database

Intergovernmental Agreement

- **Member States can join through Accession**
 - Model Instrument of Accession
- **Signatory states to ratify, approve or accept the Agreement**
 - Model Instrument of Ratification

Asian Highway Design Standards

| | |
|----------------------|---|
| Primary Class | Access controlled highway, Design Speed of 60-120 km/hr, 4 lanes or more |
| Class I | Design speed of 50-100 km/hr, 4 lanes or more (divided) |
| Class II | Design speed of 40-80 km/hr, 2 lanes (wide:7m) |
| Class III | Design speed of 30-60 km/hr, 2 lanes (narrow: 6m), Surface Treatment (DBST) can be used for pavement |

Asian Highway Route Signs

Thailand

- Place AH route signs within 5 years from the date of entry into force of the Agreement for the Party concerned
 - Flexible- colour and size of sign, frequency
- ASEAN Road sign Harmonization

AH1

AH11

AH14

| | | | | | | | | | | | Minimum Required Information (2) | | | | | | | | | |
|-------------------------------|-----------------------------|---------------------|-------------|--------------|-----------|--------------|-------|--------------|--------------|----------------|----------------------------------|---|----|----|---|---------|---------|----|----------|--|
| City/Town Name at Start Point | City/Town Name at End Point | Section Length (km) | | | | Terrain (km) | | | AH Route No. | AH Section No. | Number of Lanes (km) | | | | | | Surface | | | |
| | | Existing Road | River Ferry | Missing Link | Sea Ferry | Flat | Hilly | Mount-ainous | | | 1 | 2 | 4 | 6 | 8 | 10/More | AC | CC | PM DB SB | |
| Tokyo Interchang | Yokohama-Mach | 20 | 0 | 0 | 0 | 20 | 0 | 0 | AH1 | 1 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | |
| Yokohama Machi | Atsugi Interchan | 15 | 0 | 0 | 0 | 15 | 0 | 0 | AH1 | 2 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 | 0 | |
| Atsugi Interchang | Gotenba Interche | 49 | 0 | 0 | 0 | 49 | 0 | 0 | AH1 | 3 | 0 | 0 | 0 | 49 | 0 | 0 | 45 | 4 | 0 | |
| Gotenba Interchar | Numazu Intercha | 20 | 0 | 0 | 0 | 20 | 0 | 0 | AH1 | 4 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | |
| Numazu Interchar | Shizuoka Interch | 59 | 0 | 0 | 0 | 59 | 0 | 0 | AH1 | 5 | 0 | 0 | 59 | 0 | 0 | 0 | 58 | 1 | 0 | |
| Shizuoka Intercha | Hamamatsu Inter | 68 | 0 | 0 | 0 | 68 | 0 | 0 | AH1 | 6 | 0 | 0 | 65 | 3 | 0 | 0 | 68 | 0 | 0 | |
| Hamamatsu Interco | Toyokawa Interco | 39 | 0 | 0 | 0 | 39 | 0 | 0 | AH1 | 7 | 0 | 0 | 39 | 0 | 0 | 0 | 39 | 0 | 0 | |
| Toyokawa Interch | Nagoya Intercha | 56 | 0 | 0 | 0 | 56 | 0 | 0 | AH1 | 8 | 0 | 0 | 56 | 0 | 0 | 0 | 56 | 0 | 0 | |
| Nagoya Interchar | Komaki Junction | 14 | 0 | 0 | 0 | 14 | 0 | 0 | AH1 | 9 | 0 | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | |
| Komaki Junction | Maibara Junction | 66 | 0 | 0 | 0 | 66 | 0 | 0 | AH1 | 10 | 0 | 0 | 66 | 0 | 0 | 0 | 66 | 0 | 0 | |
| Maibara Junction | Kyoto-Minami Ir | 82 | 0 | 0 | 0 | 82 | 0 | 0 | AH1 | 11 | 0 | 0 | 73 | 9 | 0 | 0 | 82 | 0 | 0 | |
| Kyoto-Minami Int | Suita Junction (C | 27 | 0 | 0 | 0 | 27 | 0 | 0 | AH1 | 12 | 0 | 0 | 0 | 20 | 7 | 0 | 27 | 0 | 0 | |
| Suita Junction (O | Kobe Junction | 32 | 0 | 0 | 0 | 32 | 0 | 0 | AH1 | 13 | 0 | 0 | 11 | 21 | 0 | 0 | 32 | 0 | 0 | |
| Kobe Junction | Sanyo Himeji-Hig | 50 | 0 | 0 | 0 | 50 | 0 | 0 | AH1 | 14 | 0 | 0 | 50 | 0 | 0 | 0 | 50 | 0 | 0 | |
| Sanyo Himeji-Hig | Okayama Junctio | 94 | 0 | 0 | 0 | 94 | 0 | 0 | AH1 | 15 | 0 | 0 | 94 | 0 | 0 | 0 | 94 | 0 | 0 | |
| Okayama Junctio | Fukuyama-Nishi | 65 | 0 | 0 | 0 | 65 | 0 | 0 | AH1 | 16 | 0 | 0 | 65 | 0 | 0 | 0 | 65 | 0 | 0 | |
| Fukuyama-Nishi I | Hiroshima Juncti | 84 | 0 | 0 | 0 | 84 | 0 | 0 | AH1 | 17 | 0 | 0 | 84 | 0 | 0 | 0 | 84 | 0 | 0 | |
| Hiroshima Junctio | Tokuyama Higas | 78 | 0 | 0 | 0 | 78 | 0 | 0 | AH1 | 18 | 0 | 0 | 78 | 0 | 0 | 0 | 78 | 0 | 0 | |
| Tokuyama Higash | Yamaguchi Junct | 49 | 0 | 0 | 0 | 49 | 0 | 0 | AH1 | 19 | 0 | 0 | 49 | 0 | 0 | 0 | 49 | 0 | 0 | |
| Yamaguchi Juncti | Shimonoseki Inte | 66 | 0 | 0 | 0 | 66 | 0 | 0 | AH1 | 20 | 0 | 0 | 66 | 0 | 0 | 0 | 66 | 0 | 0 | |
| Shimonoseki Inter | Kokura-Higashi I | 23 | 0 | 0 | 0 | 23 | 0 | 0 | AH1 | 21 | 0 | 0 | 21 | 2 | 0 | 0 | 21 | 2 | 0 | |
| Kokura-Higashi Ir | Fukuoka Interche | 55 | 0 | 0 | 0 | 55 | 0 | 0 | AH1 | 22 | 0 | 0 | 55 | 0 | 0 | 0 | 49 | 6 | 0 | |



| AH Route Section Data | | Country | | Thailand | | AH Route | | AH2 | | Section No. | | 7 | | Close | | | | | | | | | | | |
|--------------------------------|--|------------------------------|--|---|--|-----------------------|--|------------------|--|------------------------|--|----------------------------|--|---------------------------|--|----------------------|--|----------|--|----|--|---------|--|---|--|
| Date Revised | | Road Category | | National | | Route No. | | 41 | | Save | | Print | | | | | | | | | | | | | |
| 03/02/2003 | | AH Design Standard | | I | | /Road Name | | | | | | | | | | | | | | | | | | | |
| Province/State Name | | Nakhonsithammarat/Suratthani | | Start Point | | Thungsong | | End Point | | Waing Sa | | | | | | | | | | | | | | | |
| Section Length (km) | | Existing Road | | 70 | | Carriageway Width(km) | | W<=4.5m | | 0 | | Sidewalk (km) | | With | | 2 | | | | | | | | | |
| | | River Ferry | | 0.0 | | | | 4.5m<W<6m | | 0 | | | | Without | | 68 | | | | | | | | | |
| | | Missing Links | | 0 | | | | 6m<=W<7m | | 0 | | | | Unknown | | 0 | | | | | | | | | |
| | | Sea Ferry | | 0 | | | | 7m<=W<14m | | 0 | | | | No of Major Intersections | | 10 | | | | | | | | | |
| Terrain (km) | | Flat | | 31 | | 14m<=W | | 70 | | Information of Bridges | | Total No. | | 9 | | | | | | | | | | | |
| | | Hilly | | 39 | | Unknown | | 0 | | | | Total Length (m) | | 420 | | | | | | | | | | | |
| | | Mountainous | | 0 | | Type of Shoulder(km) | | Hard | | | | 70 | | Vertical Clearance<4.5m | | No | | | | | | | | | |
| | | Unknown | | 0 | | | | Soft | | | | 0 | | Design Load Below HS20-44 | | No | | | | | | | | | |
| Toll Section (km) | | Toll Section | | 0 | | No | | 0 | | Information of Tunnels | | Total No. | | 0 | | | | | | | | | | | |
| | | Free Section | | 70 | | Unknown | | 0 | | | | Total Length (m) | | 0 | | | | | | | | | | | |
| | | Unknown | | 0 | | W<=1m | | 0 | | | | Vertical Clearance<4.5m | | No | | | | | | | | | | | |
| Number of Lanes(km) | | 1 | | 0 | | 1m<W<2m | | 0 | | Number of Rest Areas | | 89 | | | | | | | | | | | | | |
| | | 2 | | 0 | | 2m<=W | | 70 | | | | Number of Refueling Points | | 8 | | | | | | | | | | | |
| | | 4 | | 66 | | Unknown | | 0 | | | | | | Traffic Accident | | No. of Accident | | 64 | | | | | | | |
| | | 6 | | 2 | | Median Width(km) | | W<=1m | | 0 | | No. of Fatalities | | 3 | | | | | | | | | | | |
| | | 8 | | 2 | | | | 1m<W | | 70 | | AADT | | 14,378 | | | | | | | | | | | |
| | | 10/more | | 0 | | | | Unknown | | 0 | | | | | | | | | | | | | | | |
| | | Unknown | | 0 | | | | | | | | | | | | | | | | | | | | | |
| ROW Width (km) | | W<=10m | | 0 | | 10m<W<=30m | | 0 | | 30m<W<=50m | | 0 | | 50m<W<70m | | 0 | | 70m<=W | | 70 | | Unknown | | 0 | |
| Year of Construction | | n.a. | | Year of Recent Rehabilitation/Improvement | | 1997 | | Funding Resource | | OECF | | | | | | | | | | | | | | | |
| Traffic Volume by Vehicle Type | | Passenger Car | | 5,717 | | Pick-up | | 3,606 | | Bus | | 1,252 | | Truck | | 1,068 | | | | | | | | | |
| | | Trailer | | 2,735 | | Motorcycle | | 2,926 | | Others | | 0 | | Non-Motorized | | 2 | | | | | | | | | |
| Surface Type (km) | | AC | | 70 | | Gravel | | 0 | | Surface Condition (km) | | Good | | 70 | | Sub-standard Section | | No | | | | | | | |
| | | CC | | 0 | | Earth | | 0 | | | | Fair | | 0 | | | | | | | | | | | |
| | | PM,DBST,SBST | | 0 | | Unknown | | 0 | | | | Bad | | 0 | | | | | | | | | | | |
| | | CG,Ma,Me | | 0 | | | | | | | | Unknown | | 0 | | | | | | | | | | | |
| Remarks | | | | | | | | | | | | | | | | Transport Containers | | Passable | | | | | | | |

Note: AC=Asphalt Concrete, CC=Cement Concrete, PM=Penetration Mastic, DBST=Double Bituminous Surface Treatment

✖

Data Output

| | | | |
|------------------------------------|--------------------------------------|-----------------|---|
| Each Country (Individual Route) | Each Country (All Routes) | Each AH Section | Close ✖ |
| Point to Point (In a Country) | Point to Point (Across Countries) | By AH Route | |

Each AH Section |
 Point to Point(In a Country) |
 Point to Point(Across Countries) |
 By: ◀ ▶

Please Select Start Countryt

Please Select Start Point

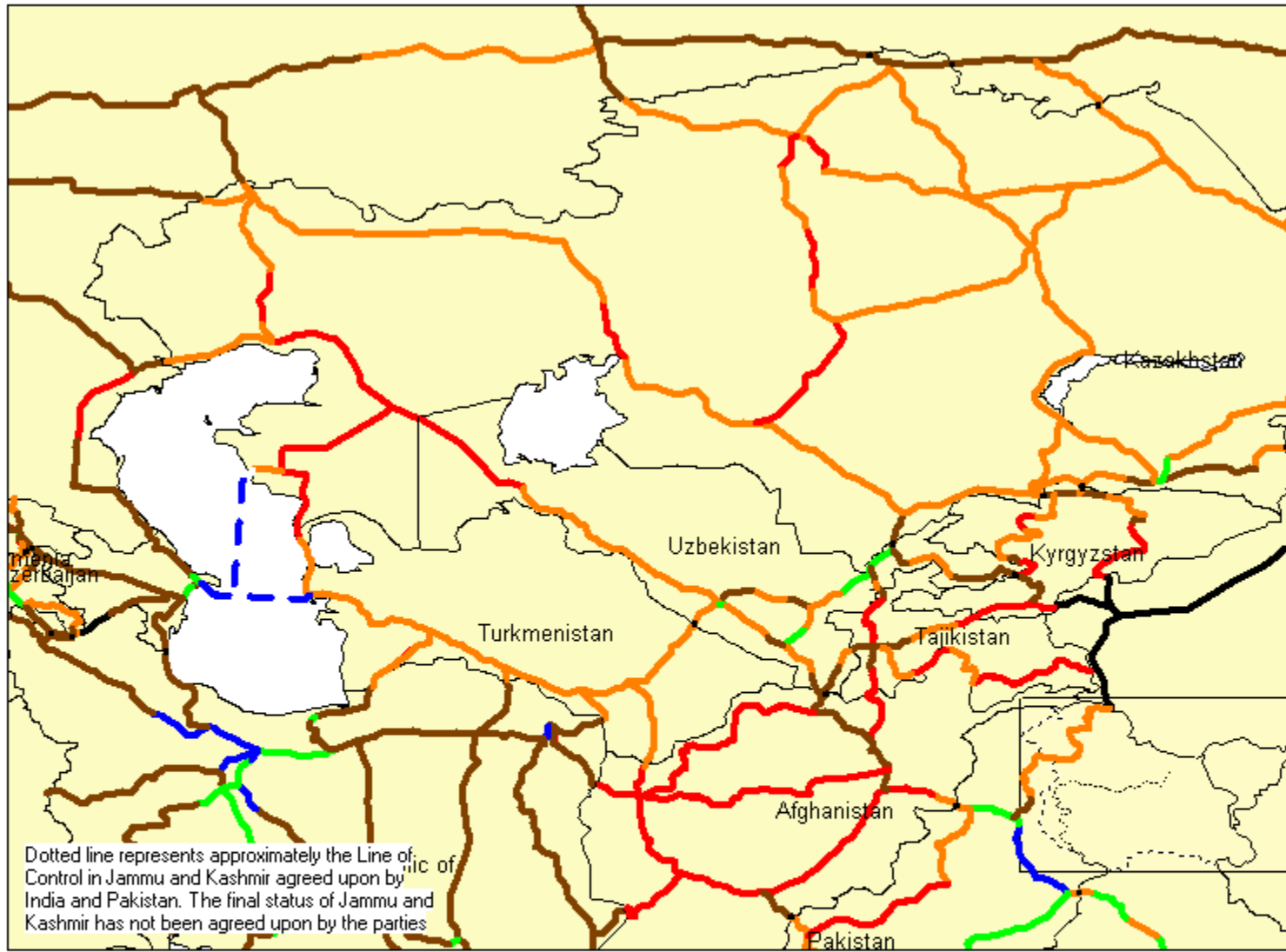
Please Select End Country

Please Select End Point

Show Table
Print Table

- Select All-weather Roads
- Shortest Distance Route
- Desirable Container Transport Route

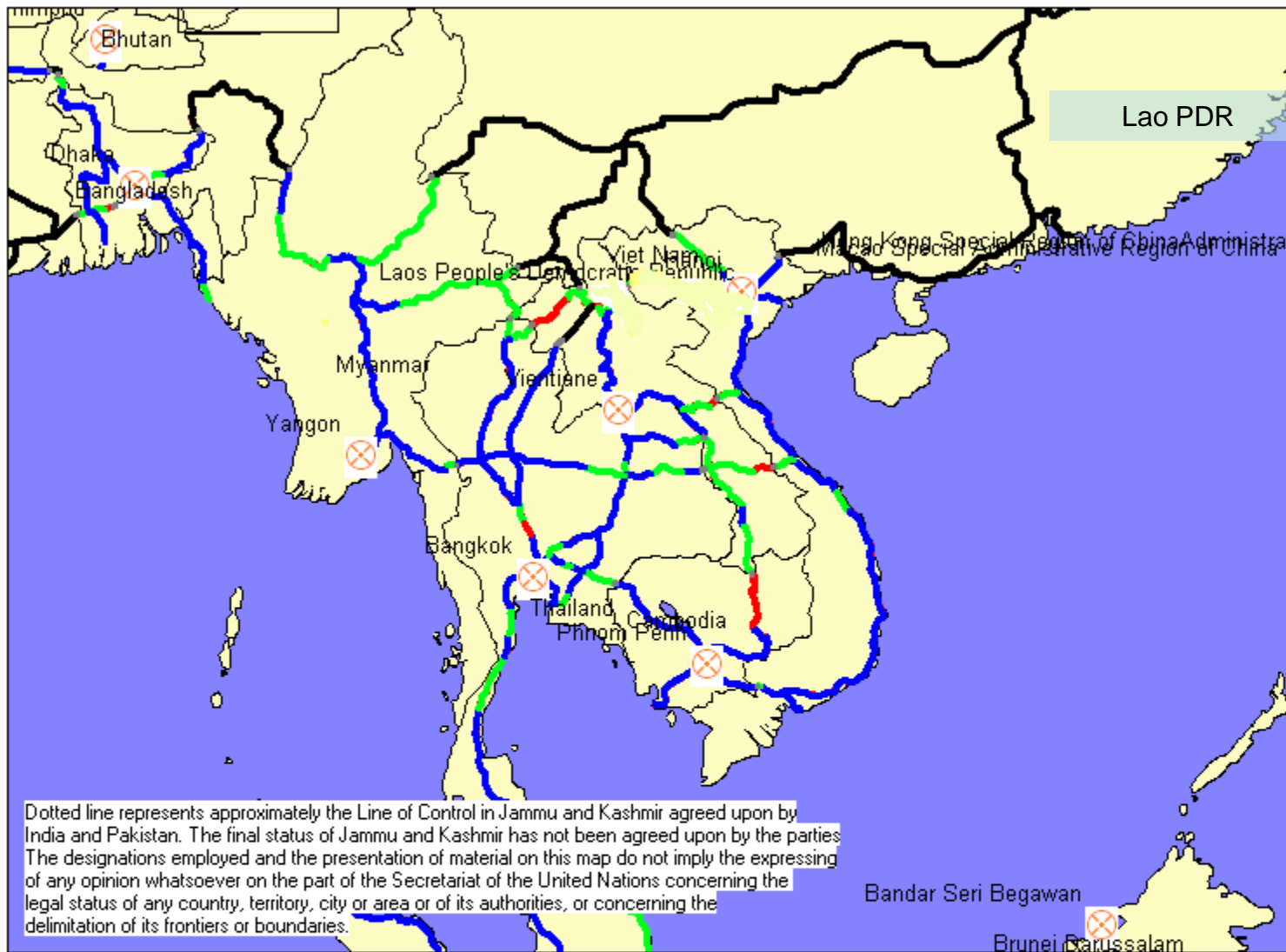
Status of AH (CA)



| Asian Highway Class | |
|---------------------|-----------------|
| ■ | Unknown |
| ■ | Below Class III |
| ■ | Class III |
| ■ | Class II |
| ■ | Class I |
| ■ | Primary |

| | |
|---|------------------------|
| / | Asian Highway |
| / | Trans-Asian Railways |
| / | Inland Water Transport |
| ○ | Capital Cities |
| + | Airports |
| □ | Ports |
| □ | ICD and Dry Ports |
| ○ | Major Cities |
| ● | AH Nodes |
| ⊙ | AH Border Crossing |
| ⊕ | Tourist Attraction |
| ▲ | Country |

Pavement Condition of AH

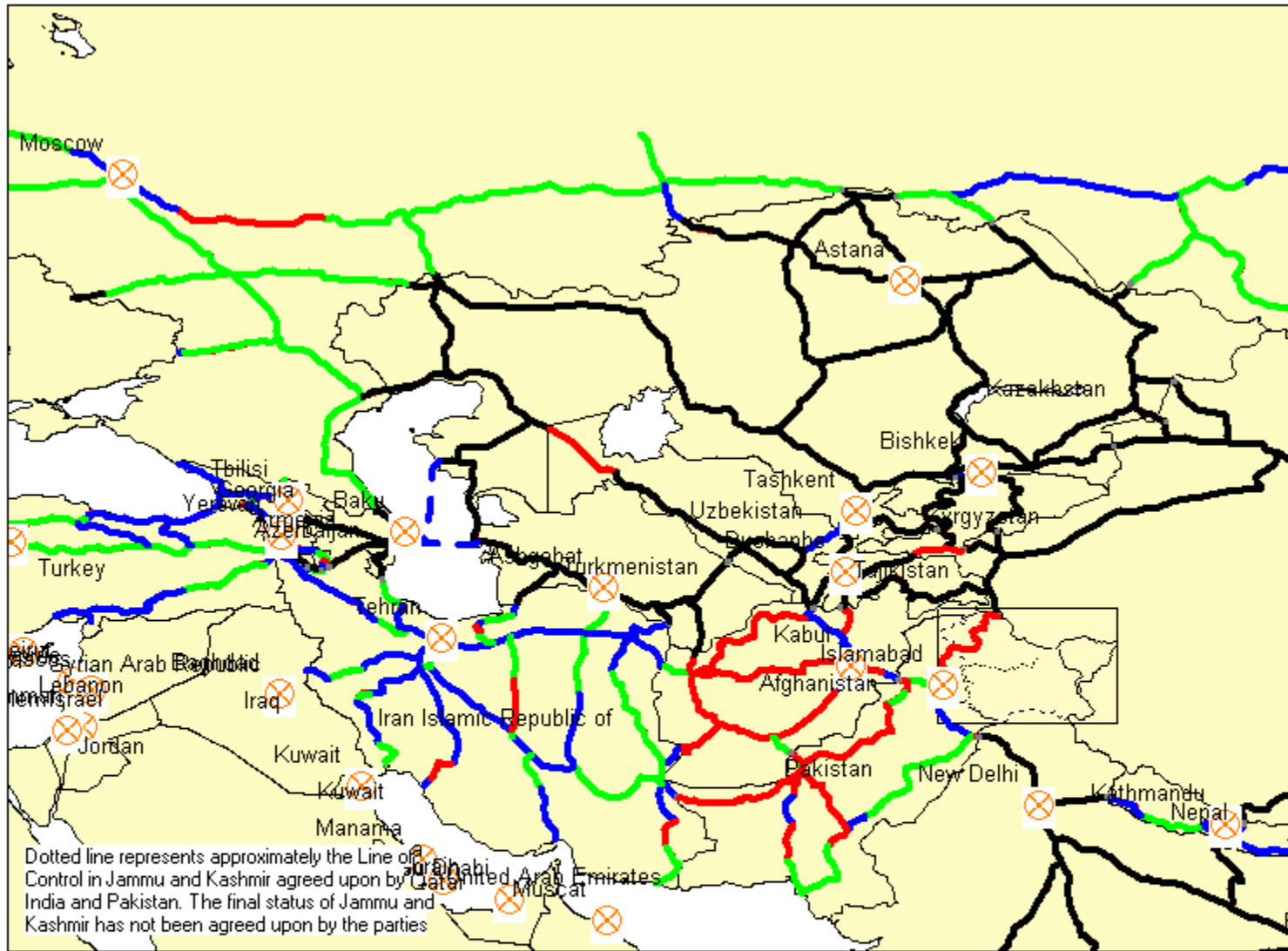


Surface Condition by Weighted Average

- Good
- Fair
- Bad
- Unknown
- Null

- / Asian Highway
- / Trans-Asian Railways
- / Inland Water Transport
- ⊙ Capital Cities
- + Airports
- ⊙ Ports
- ⊙ ICD and Dry Ports
- ⊙ Major Cities
- AH Nodes
- ⊙ AH Border Crossing
- ⊙ Tourist Attraction
- ▲ Country

Condition of Highway

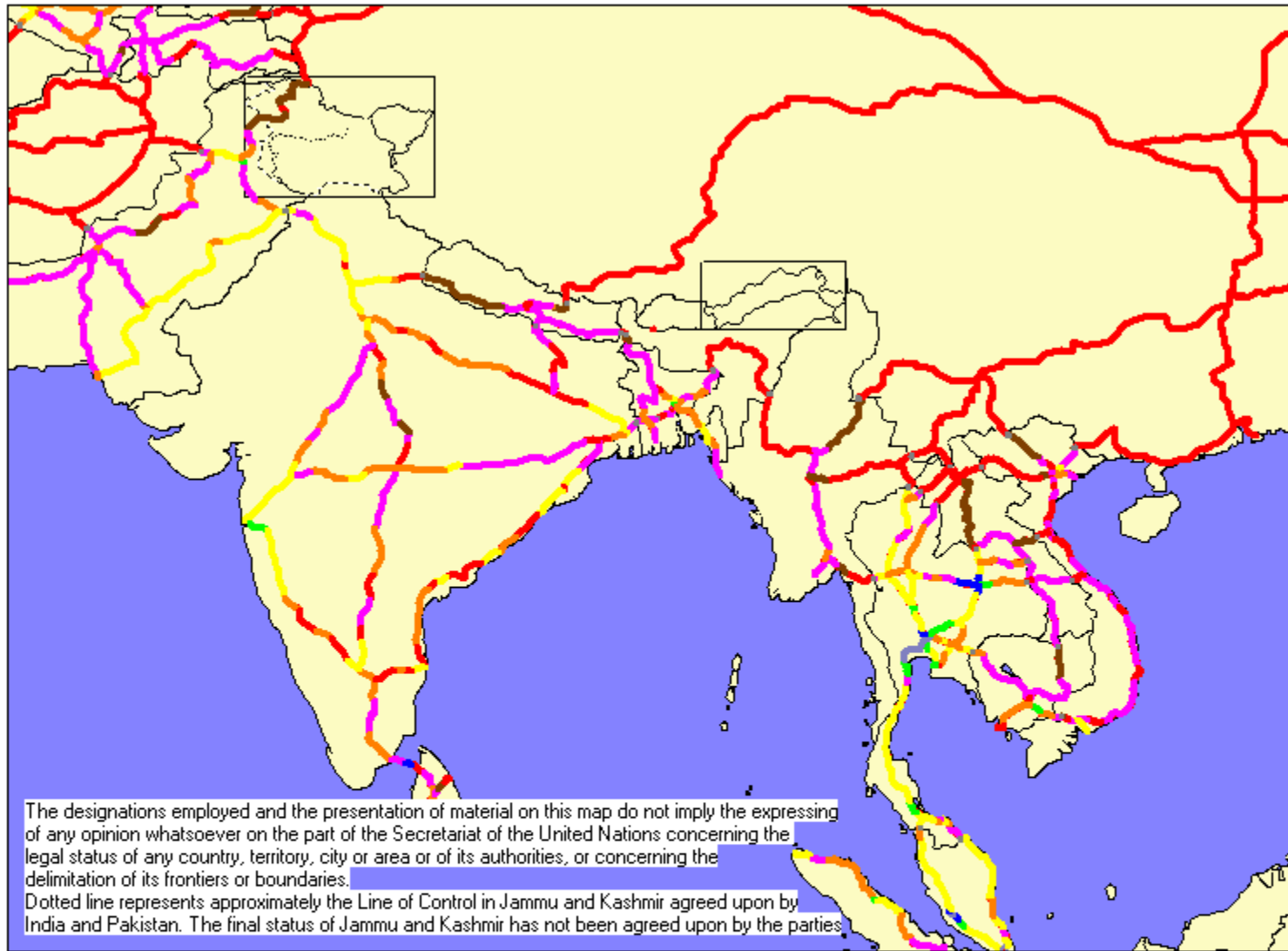


Surface Condition by Majority

- Unknown
- Bad
- Fair
- Good
- Null

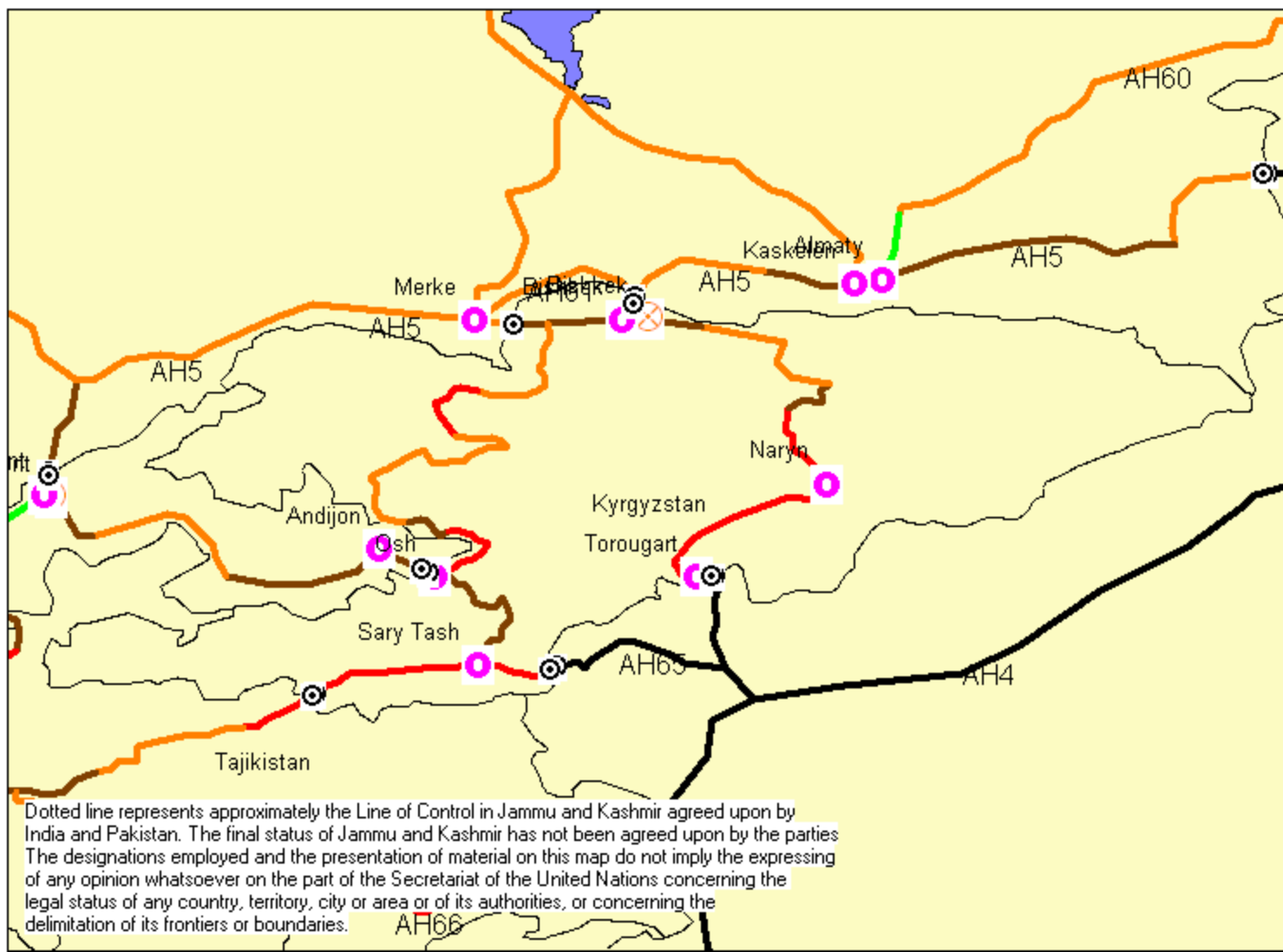
- / Asian Highway
- / Trans-Asian Railways
- / Inland Water Transport
- Capital Cities
- ✈ Airports
- ⚓ Ports
- Ⓜ ICD and Dry Ports
- Major Cities
- AH Nodes
- ⊙ AH Border Crossing
- ⊕ Tourist Attraction
- ▲ Country

Traffic



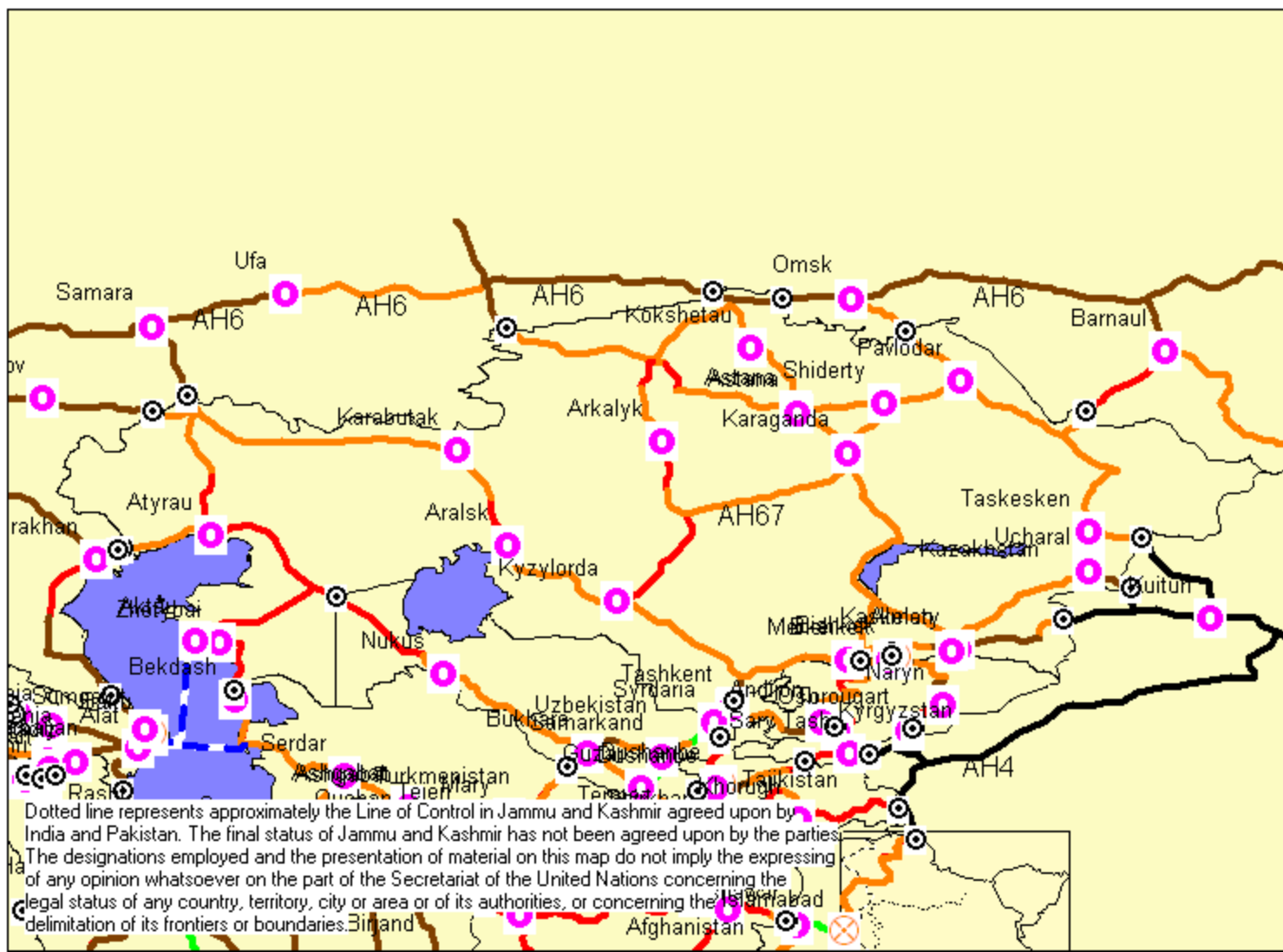


| Asian Highway Class | | Legend | |
|---------------------------------------|-----------------|--------|------------------------|
| ■ | Primary | | Asian Highway |
| ■ | Class I | | Trans-Asian Railways |
| ■ | Class II | | Inland Water Transport |
| ■ | Class III | | Capital Cities |
| ■ | Below Class III | | Airports |
| ■ | Unknown | | Ports |
| | | | ICD and Dry Ports |
| | | | Major Cities |
| | | | AH Nodes |
| | | | AH Border Crossing |
| | | | Tourist Attraction |
| | | | Country |



| Asian Highway Class | |
|---------------------------------------|-----------------|
| ■ | Primary |
| ■ | Class I |
| ■ | Class II |
| ■ | Class III |
| ■ | Below Class III |
| ■ | Unknown |

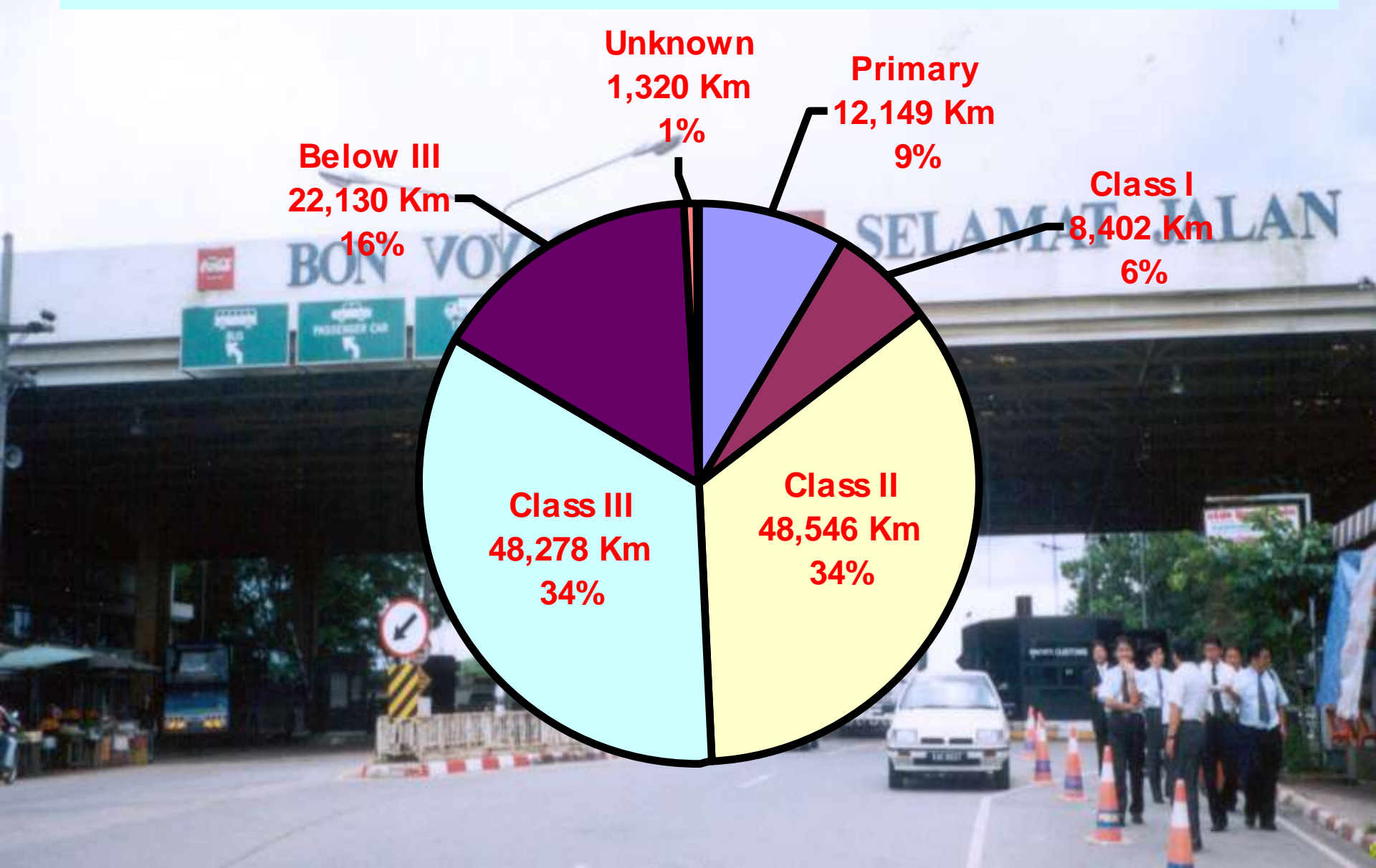
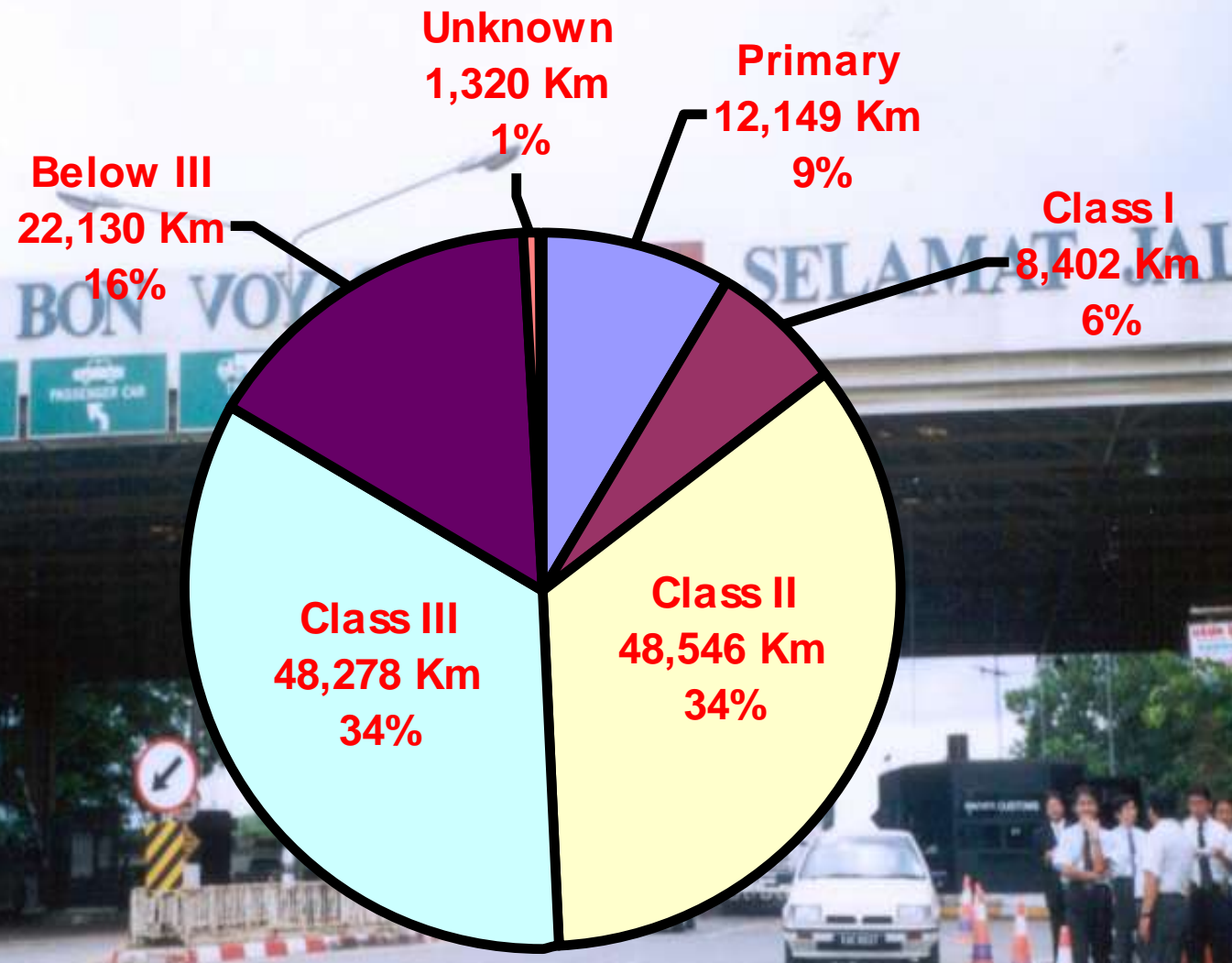
| | |
|---------------------------------------|------------------------|
| / | Asian Highway |
| / | Trans-Asian Railways |
| / | Inland Water Transport |
| ⊙ | Capital Cities |
| + | Airports |
| ⊙ | Ports |
| ⊙ | ICD and Dry Ports |
| ⊙ | Major Cities |
| ⊙ | AH Nodes |
| ⊕ | AH Border Crossing |
| ⊕ | Tourist Attraction |
| ▲ | Country |



| Asian Highway Class | |
|---------------------------------------|-----------------|
| ■ | Primary |
| ■ | Class I |
| ■ | Class II |
| ■ | Class III |
| ■ | Below Class III |
| ■ | Unknown |

| | |
|--|------------------------|
| | Asian Highway |
| | Trans-Asian Railways |
| | Inland Water Transport |
| | Capital Cities |
| | Airports |
| | Ports |
| | ICD and Dry Ports |
| | Major Cities |
| | AH Nodes |
| | AH Border Crossing |
| | Tourist Attraction |
| | Country |

Conformity to Asian Highway Standards



Asian Highway: Investment needs and Priorities

- Three Subregional Expert Group Meetings in Islamabad, Tehran and Bangkok
 - Ongoing or committed investments of US \$ 25 billion
- **Upgrading of 26,000 km requires further US \$ 18 billion**

| | | | |
|------------------|-----------|-------|--------|
| –South Asia | 3,434 km | US\$ | 2.2 b |
| –Central/SW Asia | 12,038 Km | US\$ | 7.3 b |
| • Uzbekistan | 966 Km | US \$ | 480 m |
| • Kyrgyzstan | 1589 Km | US\$ | 497 m |
| • Kazakhstan | 4567 Km | US\$ | 1597 m |
| –South-East Asia | 3,570 Km | US\$ | 4.6 b |
| –North-East Asia | 6,546 Km | US\$ | 3.2 b |
- Consolidating project profiles in a publication
- Showcasing identified priority projects
- Studying strengthening ADB and /or new Asian Investment Bank (AIB)

Expert Group Meeting, 8-10 May, Bangkok

- Road Safety
 - Road safety-review of policies and practices
- Financing Infrastructure development including through Private sector participation
 - Experts/Resource Persons to present good examples and policy initiatives

Road Safety Issues in Asia and the Pacific

- ⊕ **High levels of fatalities**
- ⊕ **Motorcyclists/Pedestrians-at high risk**
- ⊕ **Responsibilities-Institutions**
- ⊕ **Accident Reporting and Analysis**
- ⊕ **Engineering-safe design- safety audit, black spots**
- ⊕ **Road Safety Awareness**
- ⊕ **Laws, Rules- Enforcement**
- ⊕ **Driving License**



Improving Road Safety

- Ensure the safety of traffic on the Asian Highway and on roads in general
- AH classification and design standards includes provision on road safety
- GA Resolution 58/289 of 14 April 2004 on improving global road safety invites:
 - WHO and regional commission to cooperate
 - Expertise of UN regional commissions
 - Strengthening international cooperation to deal with issues of road safety-taking into account the needs of developing countries.

Proposed Declaration on Road Safety

- **Proposed Ministerial declaration on improving road safety in ESCAP Region during Ministerial Conference on Transport, 2006**
- **May include two levels of commitments:**
 - **a set of broadly defined goals to which all members can subscribe**
 - **a set of national measurable targets to achieve those goals and which member countries commit themselves to address in national action plans and programme**

Example, proposed declaration (like MDG)



| Goals | Actions/Interventions | Country-specific Targets (<i>Samples</i>) |
|--|--|--|
| <ul style="list-style-type: none"> • Make road safety a policy priority and strengthen the institutional capacity to manage road safety | <ul style="list-style-type: none"> • Embark on a vision for the national "Road to Safety" and formulate a safety strategy based on identified priority problem areas • Develop a long-term "Road Safety Action Programme" with attainable performance targets and a solid financing plan • Establish a national „lead agency" with adequate authority, sufficient resources and appropriate management structures for implementation • Benchmark the national safety strategy by monitoring of target achievements through effective crash data reporting and analysis | <ul style="list-style-type: none"> • The national road safety vision (e.g. "Our country will have the safest roads in the region", or "40 % less people are killed on our roads by 2012") and ensuing strategy is formulated • A targeted "Road Safety Action Programme 2012" (incl. a financing plan) is approved by mid 2007 • A National Road Safety Council (NRSC), with the Prime Minister as Chairman, is established by March 2007 and in charge of the implementation of the Road Safety Action Programme (RSAP) • The national crash data reporting and analysis system to monitor target achievements is modified and computerized by mid 2007 |

Improvement and facilitation of cross border transport

■ **International Transport Conventions**

- ESCAP resolution: 48/11—seven transport facilitation conventions
 - Road Traffic, Road Signs and Signals
 - TIR Conventions, Temporary Importation of Commercial Vehicles, Customs Convention on Containers
 - Harmonization of Frontier Controls of Goods, International Carriage of Goods by Road

■ **Transport Facilitation Agreements**

- Facilitation of land transport in the Greater Mekong Subregion (with ADB)
- Intergovernmental Agreement on International Road Transport with Shanghai Cooperation Organization

Other Highway Related Activities

- ❖ **Ministerial Conference on Transport, November 2006**
- ❖ **Advisory services**
 - ❖ **Road and Environment**
 - ❖ **Road Maintenance**
 - ❖ **Capacity Buildings Trainings**

Asphalt Laying -Ch 30+405~30+600 RHS
Date: 31 Mar 2004

For more information on UNESCAP Transport activities visit

<http://www.unescap.org/>

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