SmartRail EUROPE

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Railway Gazette EVENTS

Connecting Europe's Cities

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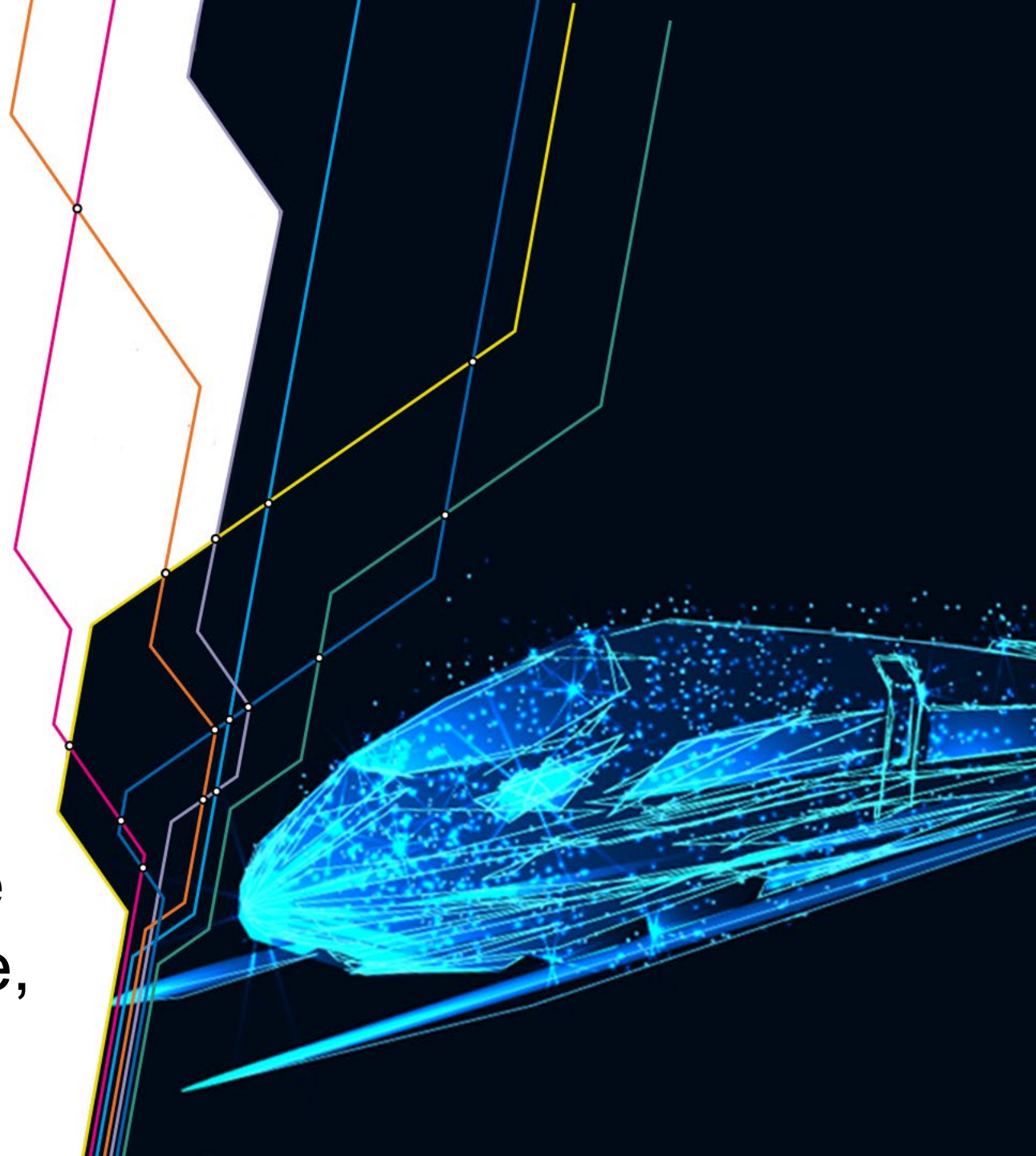


České dráhy
Národní dopravce

CONNECTING EUROPE´S CITIES

RU´s EXPERIENCE & CHALLENGES

16/05/2023

SmartRail EUROPE

Railways: On the right Track?

Does Railway fit for future needs for international travel?

…or even for pan-European travel?

Many believe that yes!

The most critical issues addressed (EU level) significant effort has been made:

- Lack of attractiveness and competitiveness
- Lack of interoperability
- Lack of capacity
- Lack of economic certainty

- …and it´s GREEN

- Liberalization
- Common standards TSI + EU money
- New infrastructure envisaged TEN-T
- PSO still applicable

Why does it take so much time?

....and why we will hear *„We need to implement ETCS...“* still many times?

It is too complex...

Technically, administratively etc...

Proper understanding

e.g. Single European Railway Area

≠ one railway model

Realistic expectations vs. emotions

Interdependency: vehicle - infrastructure

Historical legacy – variety of technical solutions

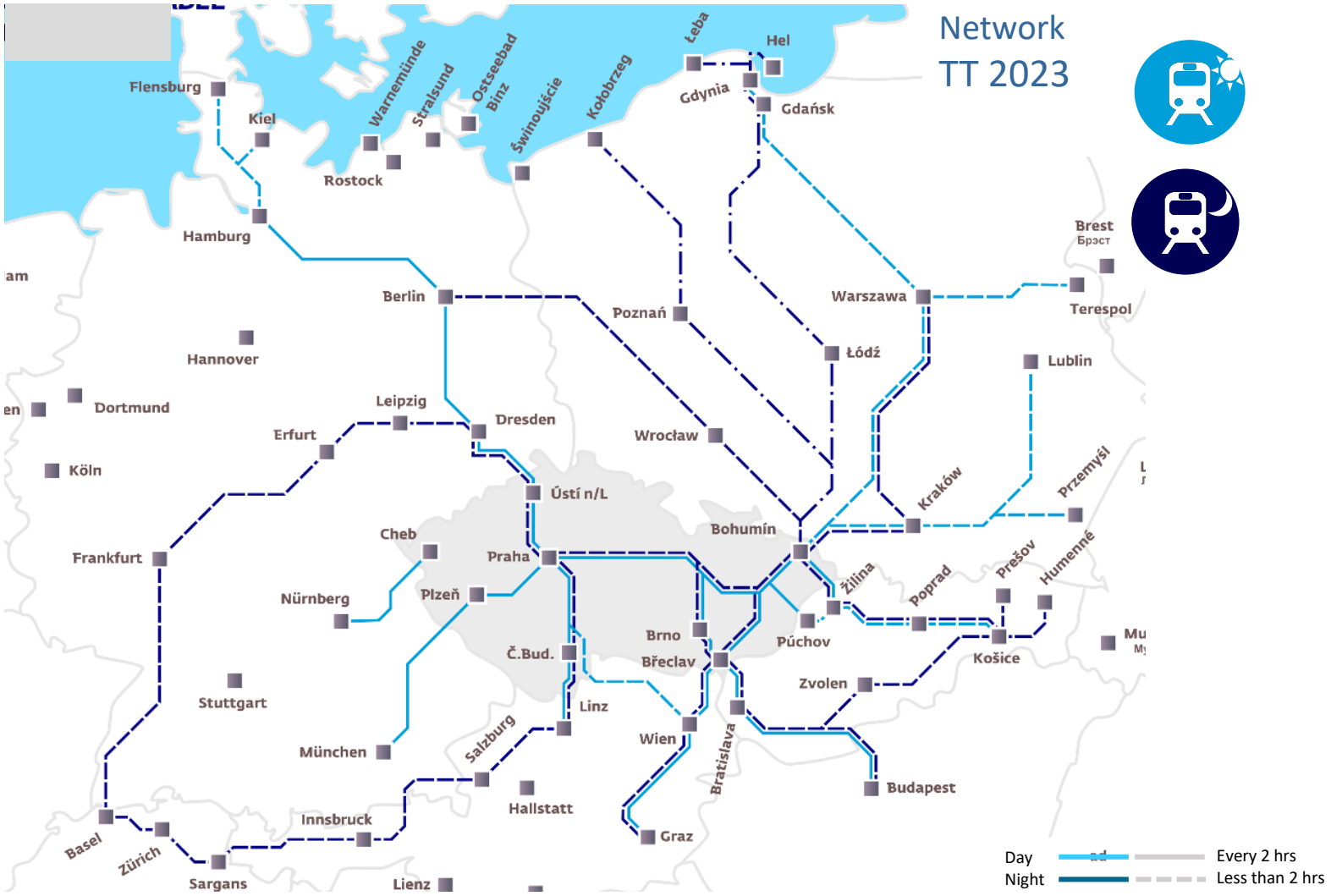
Railway reform = more stakeholder than in the past

➡ **sometimes different interests**

Coexistence of private and public interests

etc.

České dráhy believes too…



ČD:

6500+ pax. services daily

420+

cross-border services daily

166 international

long-distance trains daily

2 hrs int. service

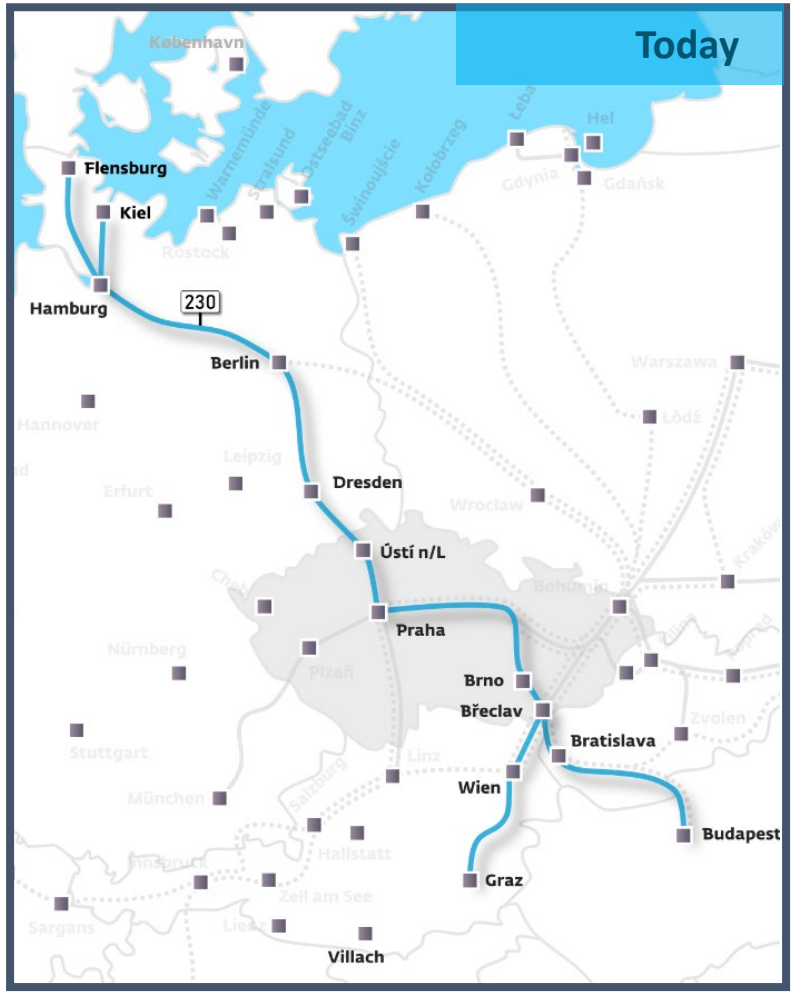
Berlin, Vienna, Warsaw, Budapest…

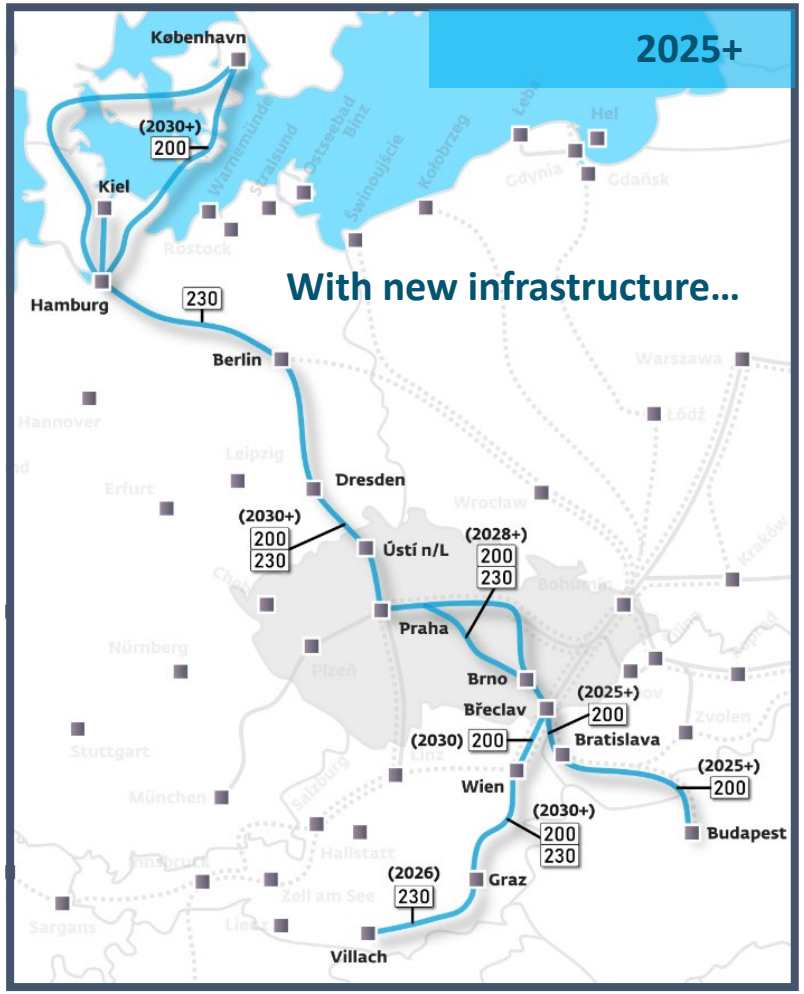
connecting many regional capitals

České dráhy Connecting Europe's Cities

...with partners

Extending existing EU connections…





…with new trans 2024+

Loco + 9 coaches trainsets, 555 seats

Preconditions

- Speed 230 km/h – Deutschlandtakt if CD wants operate north of Berlin after 2025

Voluntary Prerequisites

- New quality + higher reliability
- New Infrastructure (Fehmarnbelt, Semmering, Koralm, CEE HS projects..)

If new infrastructure:

Changes in demand patterns

New destinations reachable

Business case vs. Business stability

50 interoperable locos

* **2019-21** – business-case development, contract definition
* **2022** – contact placement
* **2025** – first delivery
* **2026** – full delivery

240 mil. EUR

20 train sets (180 carriages)

* **2019-21** – business-case development, contract definition
* **2021** – contact placement
* **2024** – first delivery
* **2027** – full delivery

520 mil. EUR

Operational range

CZ, DE, DK, AT, SK, HU, PL

* Technical aspects
* Agreement among cooperating RUs/partners

PROJECT LIFE-CYCLE

BUSINESS CASE DEVELOPMENT

2019-20

REAL BUSINESS STARTS

2025

BUSINESS CASE minimum period

10-15 years

FULL AMORTIZATION TIME

30 years

Technology, seamless interoperability & reality

Range (CZ, DE, DK, AT, SK, HU, PL)

* 1 100 km to Copenhagen
* 600 km to Budapest
* 800 km to Villach

7 Infrastructure managers

? Infrastructural projects

Time

ETCS L2, BL3

* Infra – latest TSI standards
* Vehicle – TSI valid in time of contact placement

RISK:
of loosing compatibility
unequal development technologies in MSs

FULL COMPATIBILITY between infra and vehicle
in TIME and SPACE is ESSENTIAL

If no 2 options
- new investments = business-case risk
- no investments = stepping operation

ETCS PARADOX

ETCS

SHOULD BE **EU WIDE UNIVERSAL -** BUT SPECIFICS FOR MANY INFRSTRUCTURES

HIGH COSTS + LOW STABILITY = many syst. version – UNCLEAR LONG-TERM COMPATIBILITY

CHALLENGING IMPLEMENTATION - HIGH DEPENDECY ON INDUSTRY, DIFFERENT APPROACH OF MS

CLASS B SYSTEMS

COUNTRY SPECIFIC = HIGH COSTS if more systems needed + technically challenging

ONCE SOLVED – NO LIMIT for operation

EXTREMELY STABLE in time = LONG-TERM OPERATIONAL (40-50 years), PREDICTABLE ENVIRONMENT

Lesson learned – ETCS/Digitalization

Many railway vehicles need to be equipped with Class B syst.

Many destinations not located on main corridors

Flexibility for detours (by 2050?)

ETCS + Class B = costly and time demanding authorization,

technical risks – error corrections

ETCS Retrofit hidden costs

ČD needs 1000+ vehicles with ETCS

Prototype– 6-9 months

Serial production – 2-3 months

Parallel installation on more vehicles needed (5)

Timetable planning and capacity allocation

1 year periodicity

Does this model work in competitive environment?

Can RUs invest „billions“ in 1 year stability?

Key role of IMs decision-making process:

Nationally oriented + act in the care due of a prudent businessman (nationally)

IMs prefer best solution for particular TT
= how easily existing service could be replaced by new one?

Infa works vs. Clock face TT vs. Services cancellation

„Go-Everywhere Train“ paradox

Rail = strictly planned system because of capacity management and technical reasons…

Multiannual Framework Agreements

Between RUs – IMs

For Mid-term period

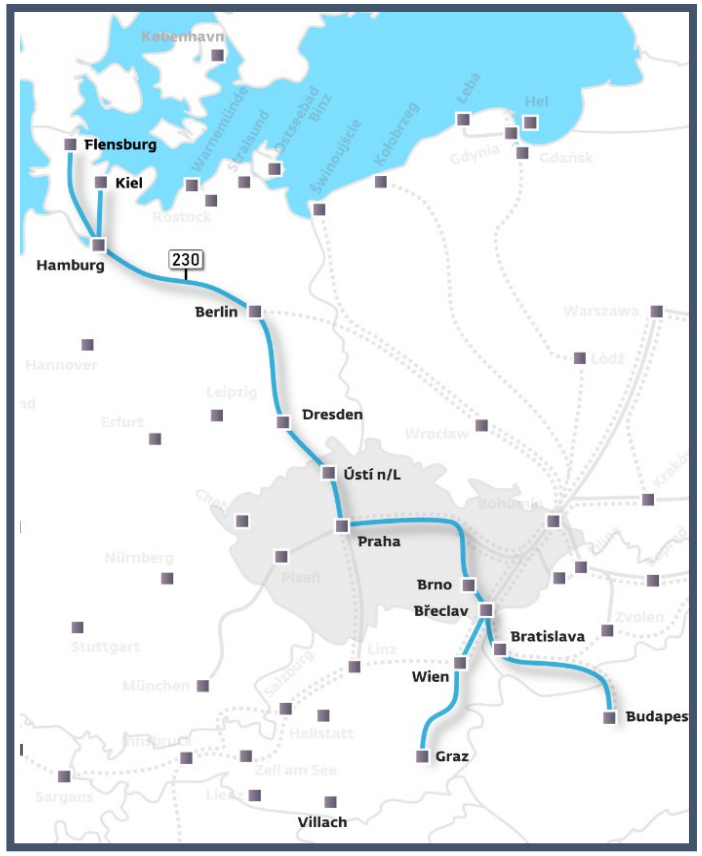
Analogue to PSC

Mid- and long-term investment framework for IMs (PREDICTIVE MAINTENANCE)

Clear rules for RUs = predictability

…even when go-everywhere trains were available planning process would stop RU´s business for one year if looses its capacity in regular TT planning process (relevant for passenger services)

Corridor? Line? Network?



ORGANISATION – what is Line, what Corridor?

* Line Ex 5 Praha – Hamburg
* Line Ex3 a) Praha – Wien – Graz
  b) Praha – Bratislava – Budapest
* Hungaria: Hamburg – Budapest (Ex3b+5)
* Vindobona: Berlin – Wien – Graz (Ex3a + 5)

* PSO – CZ, AT, SK, HU Commercial – DE

* Common work - PSO authorities and RUs , step by step developed since 90s
* Cooperative model – interconnection of national express trains

* TT organized on regular 2 hrs interval,
* **NETWORK** effects – interchange to other service – nationally, internationally,

KEY ISSUES:

Secure capacity for commercial services and PSO services?

How to keep the system/network developed?

How to organize international PSO? Internationally or nationally?

3 MOST ESSENTIAL ELEMENTS FOR SEAMLESS RAILWAY IN EU

If EU goals to be reached…

PREDICTABILITY AND STABILITY

PREDICTABILITY AND STABILITY

BACKWARDS-COMPATIBLITY

Final observations instead of a conclusion

New infrastructure = new capacity and competitive travel times

if competitive travel times = higher demand…

if demand.. then most other challenges (e.g. Ticketing) will market solve itself

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THANK YOU
FOR YOUR ATTENTION!

READY FOR YOUR QUESTIONS

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