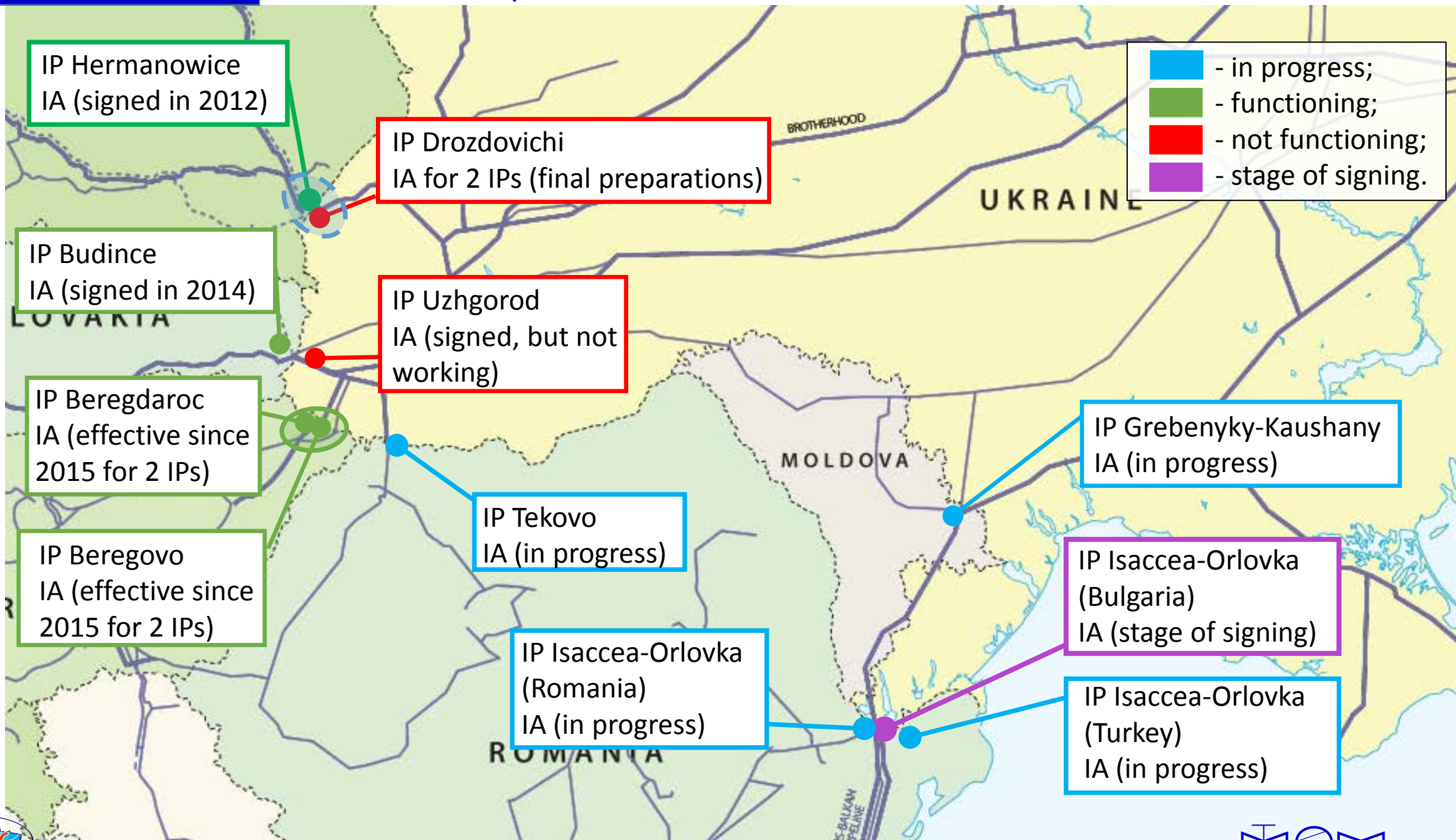


Interoperability Network Code Implementation. Ukrainian Case



Interconnection points



Interconnection points (Comparison – business rules)

	IP Budince	IP Beregovo (IP1) - Beregdaroc (IP2)	IP Hermanowice	IP Isaccea-Orlovka (Bulgaria)	GCP GAZ-SYSTEM - UKRTRANSGAZ
OBA	rolling	rolling	settled to “0” at the end of each month	rolling	rolling
Matching	MSO – EUSTREAM ISO – UTG	MSO – UTG ISO – FGSZ	MSO – UTG ISO – GAZ-SYSTEM	MSO – TRANSGAZ ISO – UTG	MSO – UTG ISO – GAZ-SYSTEM
Time of DELORD	14:45 CET of D-1	13.30 (12:30) UTC of D-1	14:45 CET of D-1	13.45 (12:45) UTC of D-1	14:45 CET of D-1
Time of DELRES	not later than 15:30 D-1	not later than 30 min after DELORD	not later than 15:30 D-1	not later than 45 min after DELORD	no later than 45 min after DELORD
Beginning of Gas day	6.00 CET	5.00 (4:00) UTC	6.00 CET	5.00 (4:00) UTC	6.00 (5:00) UTC
Units	kWh (m ³ are used on UTG side)	kWh (m ³ are used on UTG side)	kWh (m ³ are used on UTG side)	kWh (m ³ are used on UTG side)	kWh (m ³ are used on UTG side)
Backhaul	possible	possible	not possible	possible	possible



Interconnection points (Comparison – quality parameters)

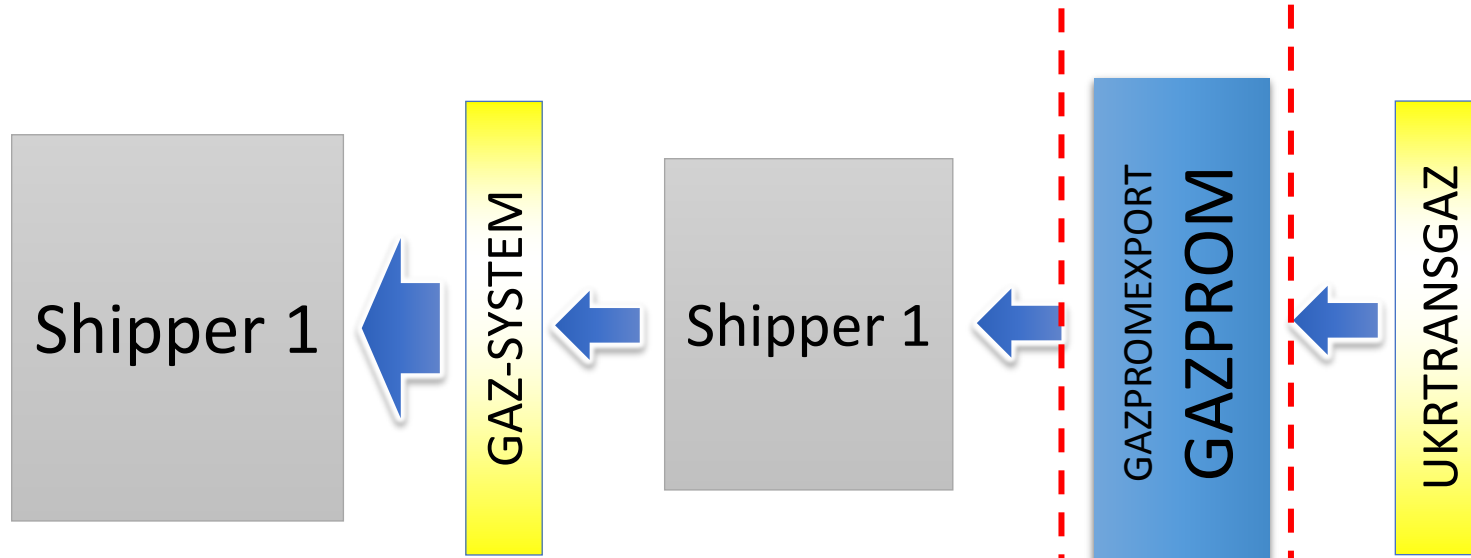
	IP Budince	IP Beregovo (IP1) - Bregdaroc (IP2)	IP Hermanowice	IP Isaccea-Orlovka (Bulgaria)	GCP GAZ-SYSTEM -UKRTRANSNAZ
Methane (C1) (min)	92	90	-	70	Under discussion
Ethane (C2) (max)	4	7	-	10	Under discussion
Propane (C3) (max)	2	3	-	3,5	Under discussion
Butane (C4) (max)	2	2	-	1,5	Under discussion
Pentane (C5) (max)	1	1	-	0,5	Under discussion
Hexane (C6+) (max)	-	-	-	0,2	Under discussion
Nitrogen (N2) (max)	3	5	-	10	Under discussion
Carbon dioxide (CO2) (max)	2	2.5	-	5	Under discussion (preliminary figure: 3)
Oxygen (O2) (max)	0,01	0,02	-	0,02	Under discussion (preliminary figure: 0,2)
Hydrogen sulphide (H2S) (max mg/m³)	2	5	7	6,5	Under discussion (preliminary figure: 7)
Mercaptan sulphur (C2H5SH) (max mg/m³)	5	6	16	20	Under discussion (preliminary figure: 16)
GCV (kWh/m³)	min 9,96 max 11,92 (25°C/20°C)	min 10,71 max 11,54 (25°C/20°C)	min 10,56 max 11,56 (25°C/0°C)	min 10,738 (25°C/0°C)	Under discussion (preliminary figure: min 10,556) (25°C/0°C)
Impurities (max)	-	-	-	0,05 g/V(0)/m ³	-



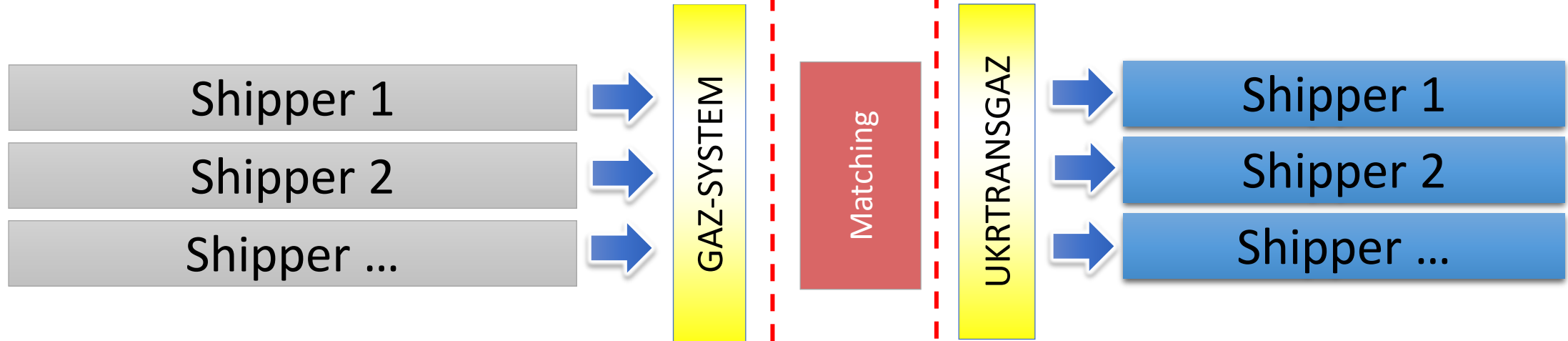
- 2006 – signed IA concerning the cooperation on the border station Drozdovichi;
- 2012 – signed two Annexes to this IA concerning the cooperation on the border station Hermanowice, including OBA provisions.
- 2014 – signed Annex 3 to the IA concerning the allocation rules.
- Cooperation in accordance with abovementioned IA in IP Drozdovichi is complicated because it is impossible to receive information about Shipper Pairs in UTG side of the IP.
- New IA for Grid Connection Point GAZ-SYSTEM – UKRTRANSغاز is on the final stage of its preparation. This IA establishes one Interconnection Point GCP GAZ-SYSTEM – UKRTRANSغاز includes all provisions, required in Interoperability Network Code, rules of OBA, backhaul, etc.

UKTRANSGAZ – GAZ-SYSTEM cooperation

(current situation in IP Drozdovichi)



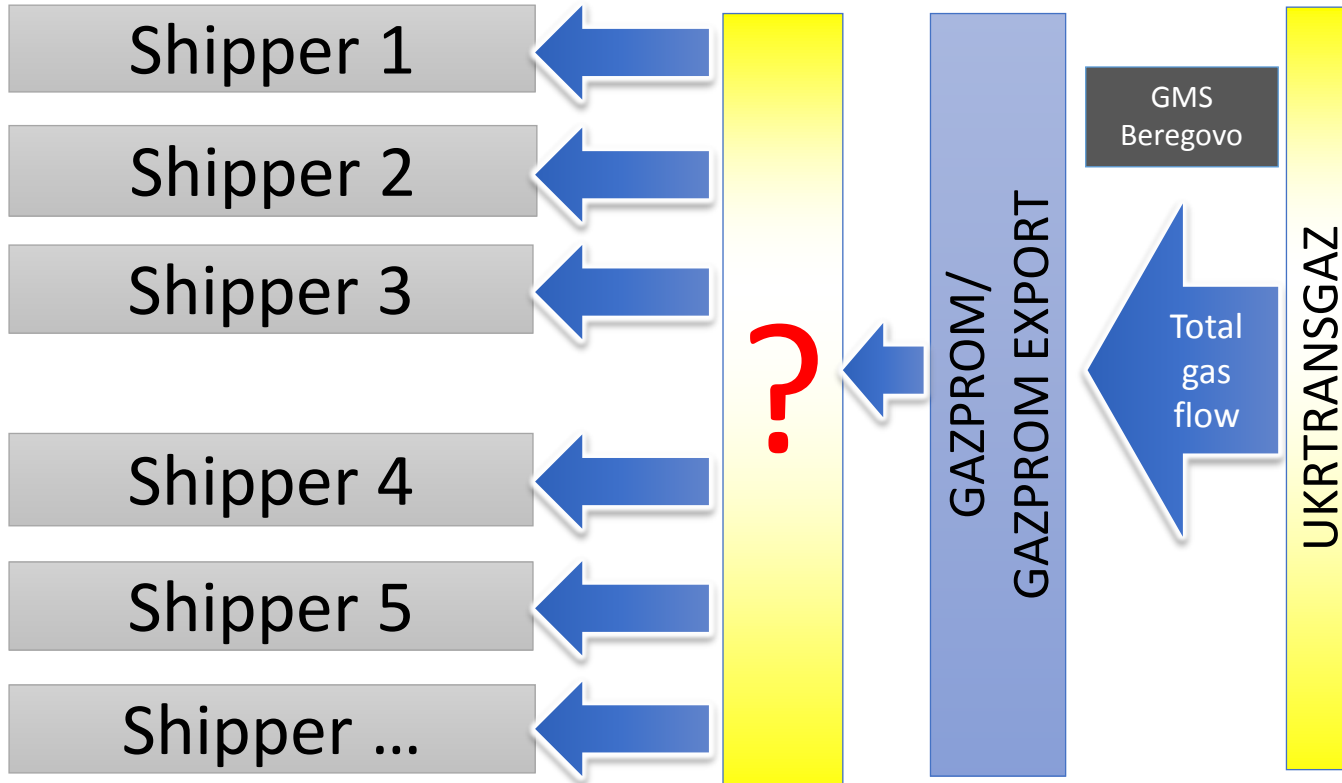
(current situation in IP Hermanowice)



- 2013 – signed IA concerning the cooperation on the border stations Beregovo (IP1) and Beregdaroc (IP2);
- The IA includes all provisions, required in Interoperability Network Code, rules of OBA, backhaul (determined in Amendments), etc.

UKRTRANSGAZ – FGSZ cooperation

(current situation in IP Beregovo)



	UTG	FGSZ
IP	BEREGOVO	BEREGOVO
Shipper pair	Sh.A _ Sh. B (Gazprom _ Gazprom)	Sh.C _ Sh.D Sh.E _ Sh.F

FGSZ and its Shippers don't know about GAZPROM as delivery company

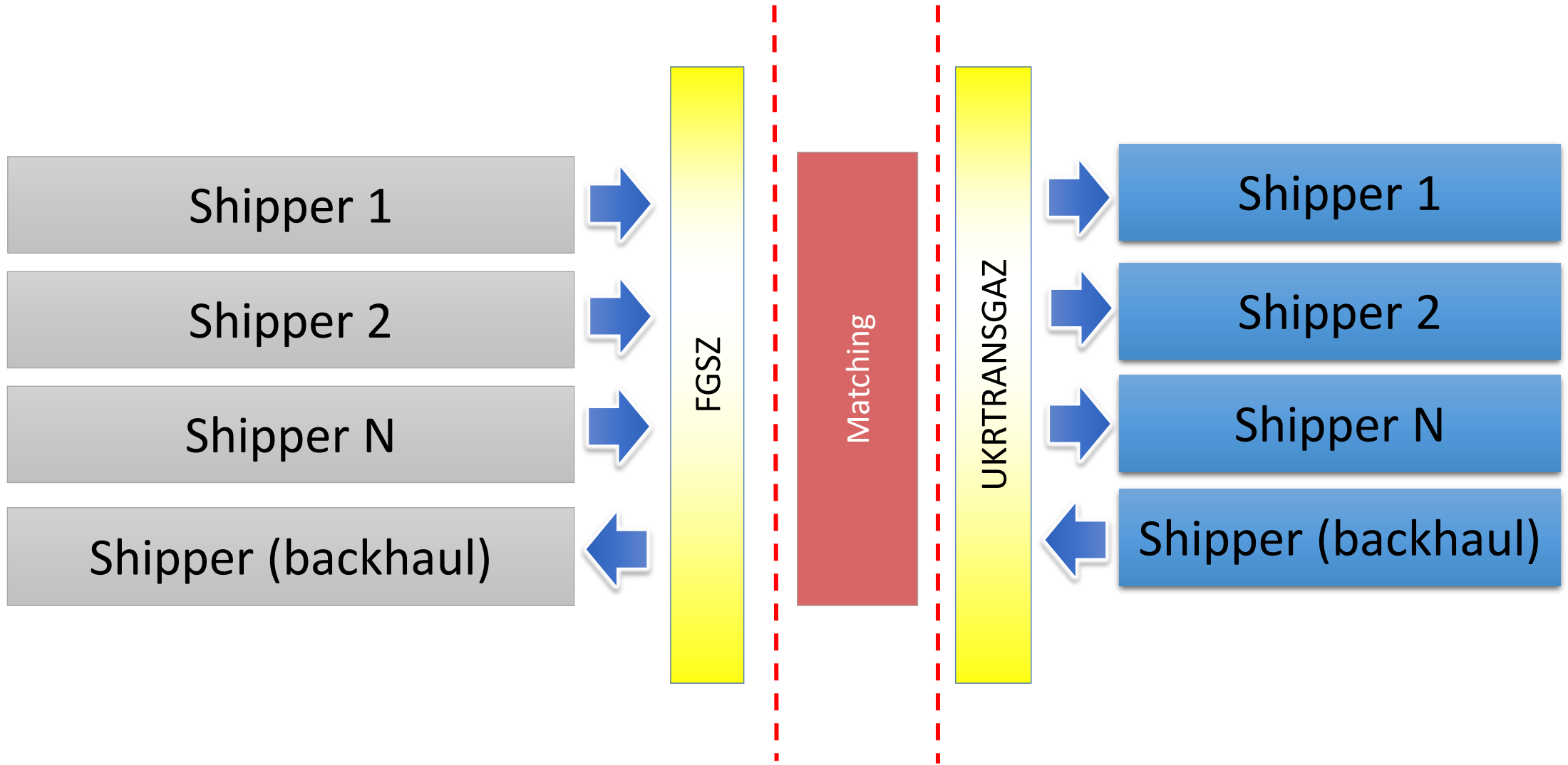
For UTG GAZPROM is receiving company at IP BEREGOVO

Delivery and receiving companies don't match



UKTRANSGAZ – FGSZ cooperation

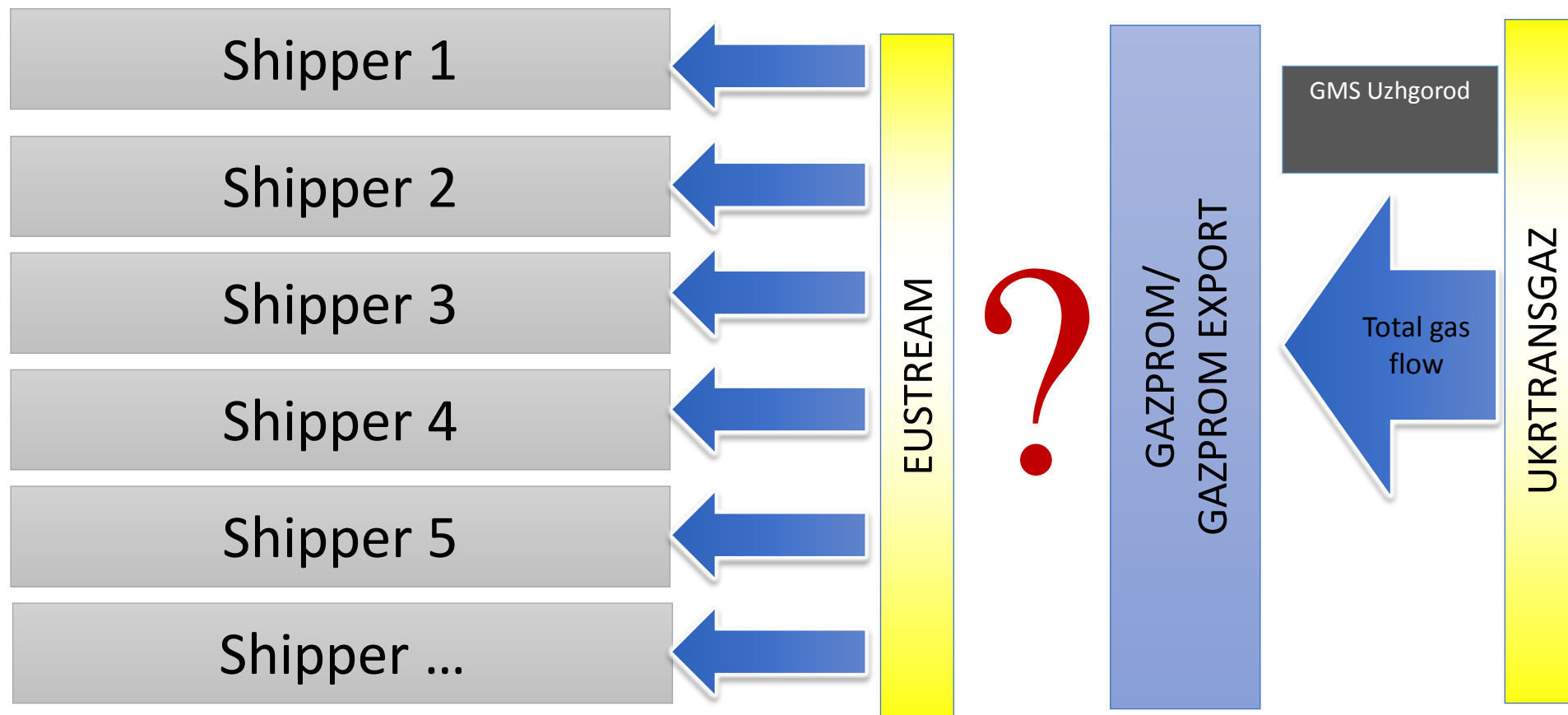
(current situation in IP Beregdaroc)



- 2014 – signed IA concerning the cooperation on the border station Budince;
- The IA includes all provisions, required in Interoperability Network Code, rules of OBA, backhaul, etc.
- The Cooperation in accordance with abovementioned IA in IP Uzhgorod is complicated because it is impossible to receive information about Shipper Pairs in UTG side of the IP.

UKTRANSGAZ – EUSTREAM cooperation

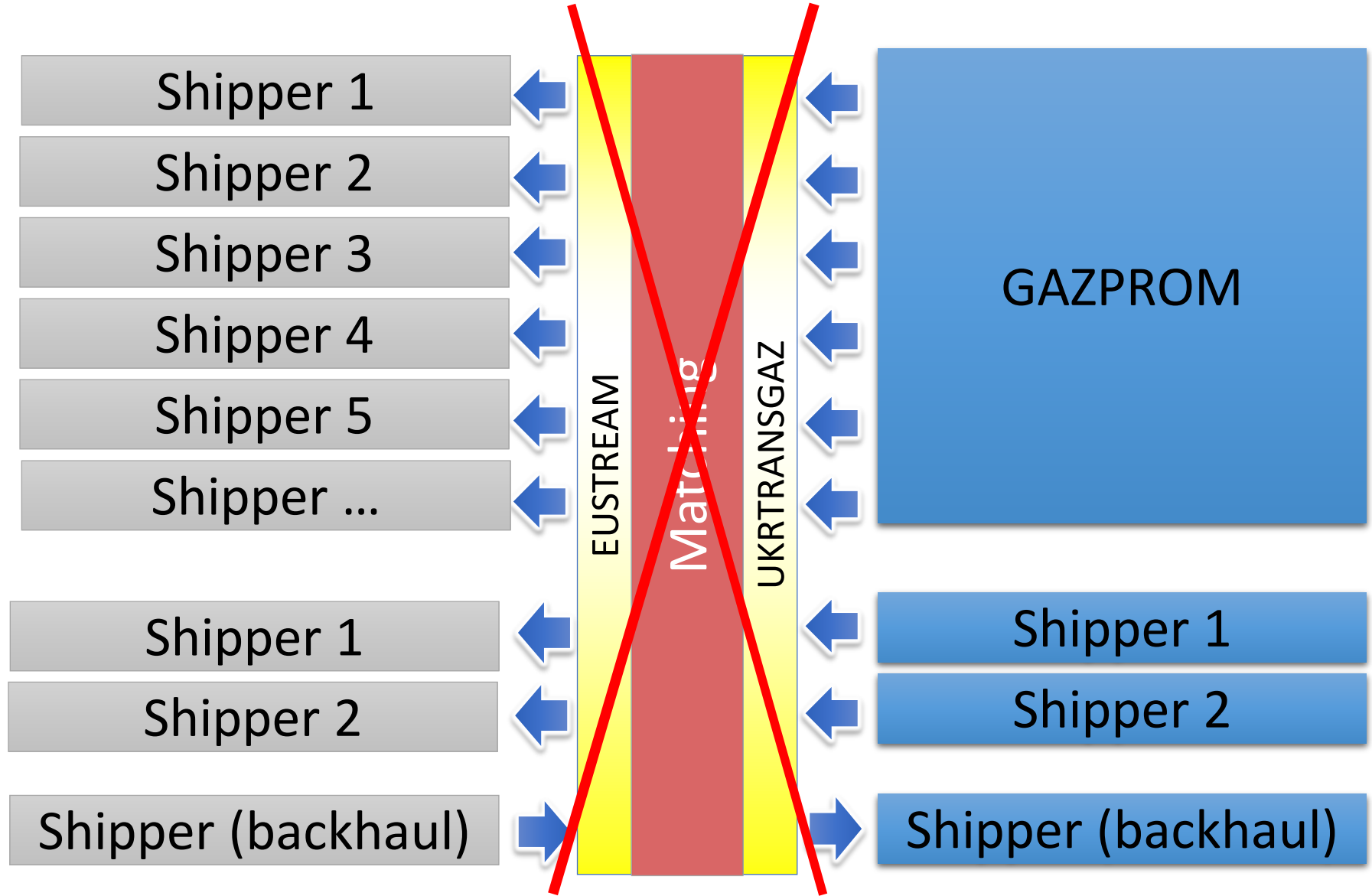
(current situation in IP Uzhgorod/Velky-Kapushany)



UKTRANSGAZ – EUSTREAM cooperation

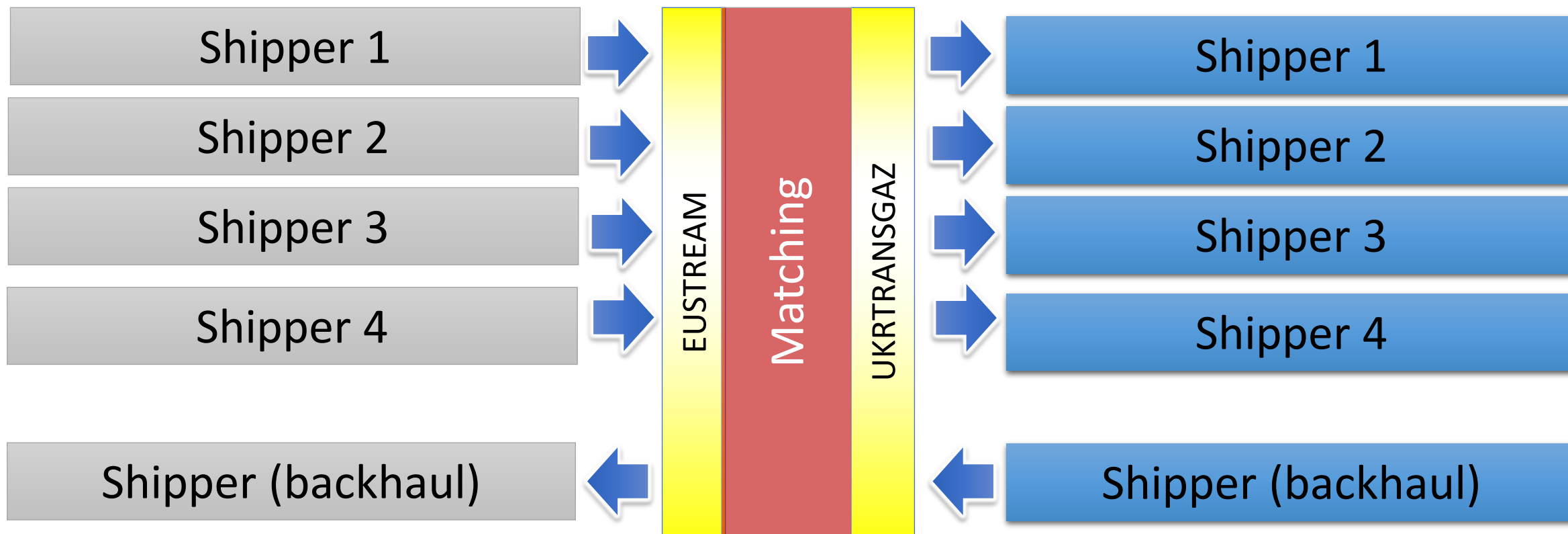
(current situation in IP Uzhgorod/Velky-Kapushany)

The Cooperation in accordance with the procedure specified in the scheme in IP Uzhgorod/Velky Kapushany is complicated because it is impossible to receive information about Shipper Pairs in UTG side of the IP.



UKRTRANSGAZ – EUSTREAM cooperation

(current situation in IP Budince)

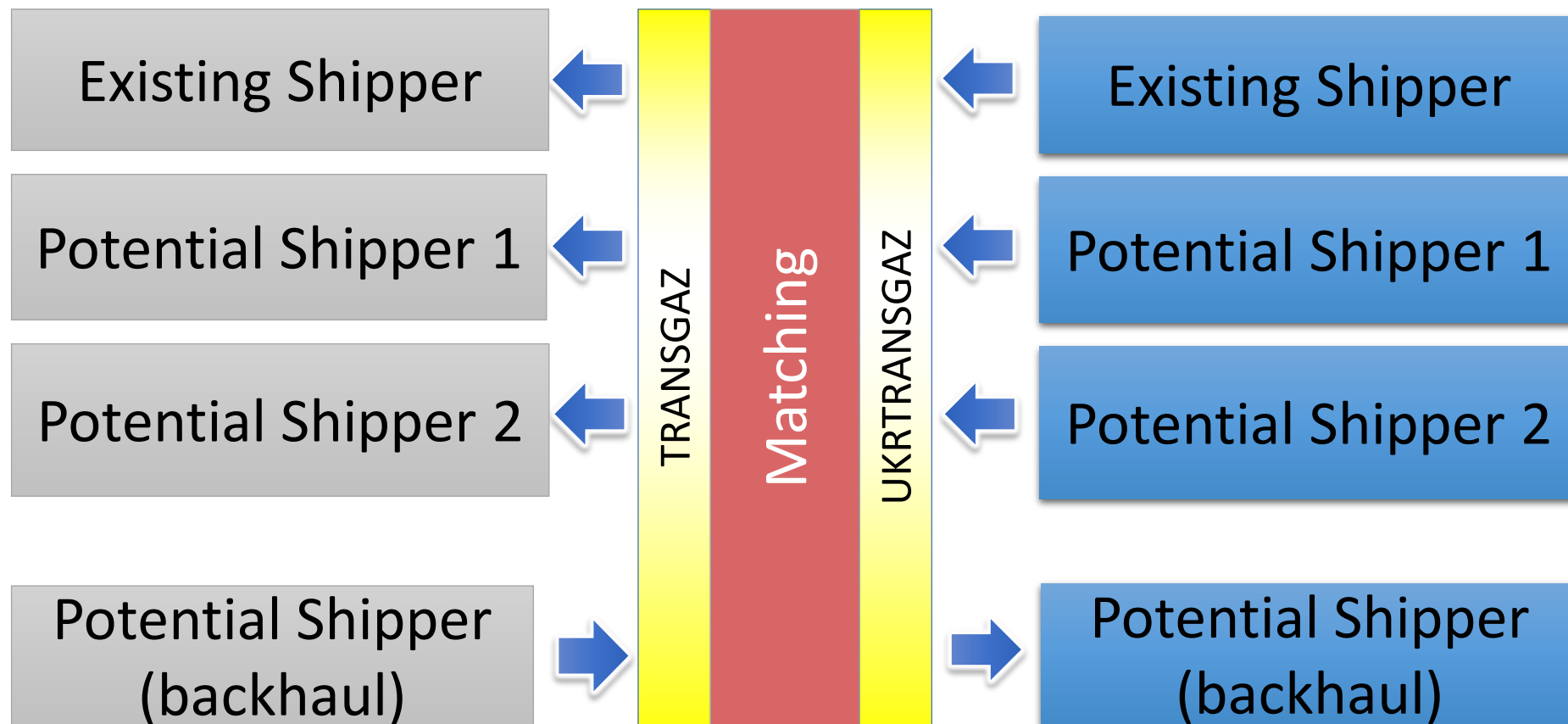


- Currently the IA for border station Isaccea – Orlovka (Bulgaria) is on the stage of signing;
- The IA includes all provisions, required in Interoperability Network Code, rules of OBA, backhaul, etc.
- The negotiations for the IAs for IPs Isaccea – Orlovka (Romania), Isaccea – Orlovka (Turkey) and IP Tekovo are in progress.

UKRTRANSGAZ – TRAHSGAZ cooperation

(IP Isaccea – after signing the IA)

We expect that existing shipper will not provide nominations to UKRTRANSGAZ, but in the IA contains relative provision to solve this problem.



Thank you for your attention!

