

FLY BETTER



Crossing or Burning Bridges

– Understanding Decision Making

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1st Asia Pacific Safety Campaign
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Online

Decision Making and Time



Decision! - Or is it ...?



LAND ASAP



Conditioned Decision Making



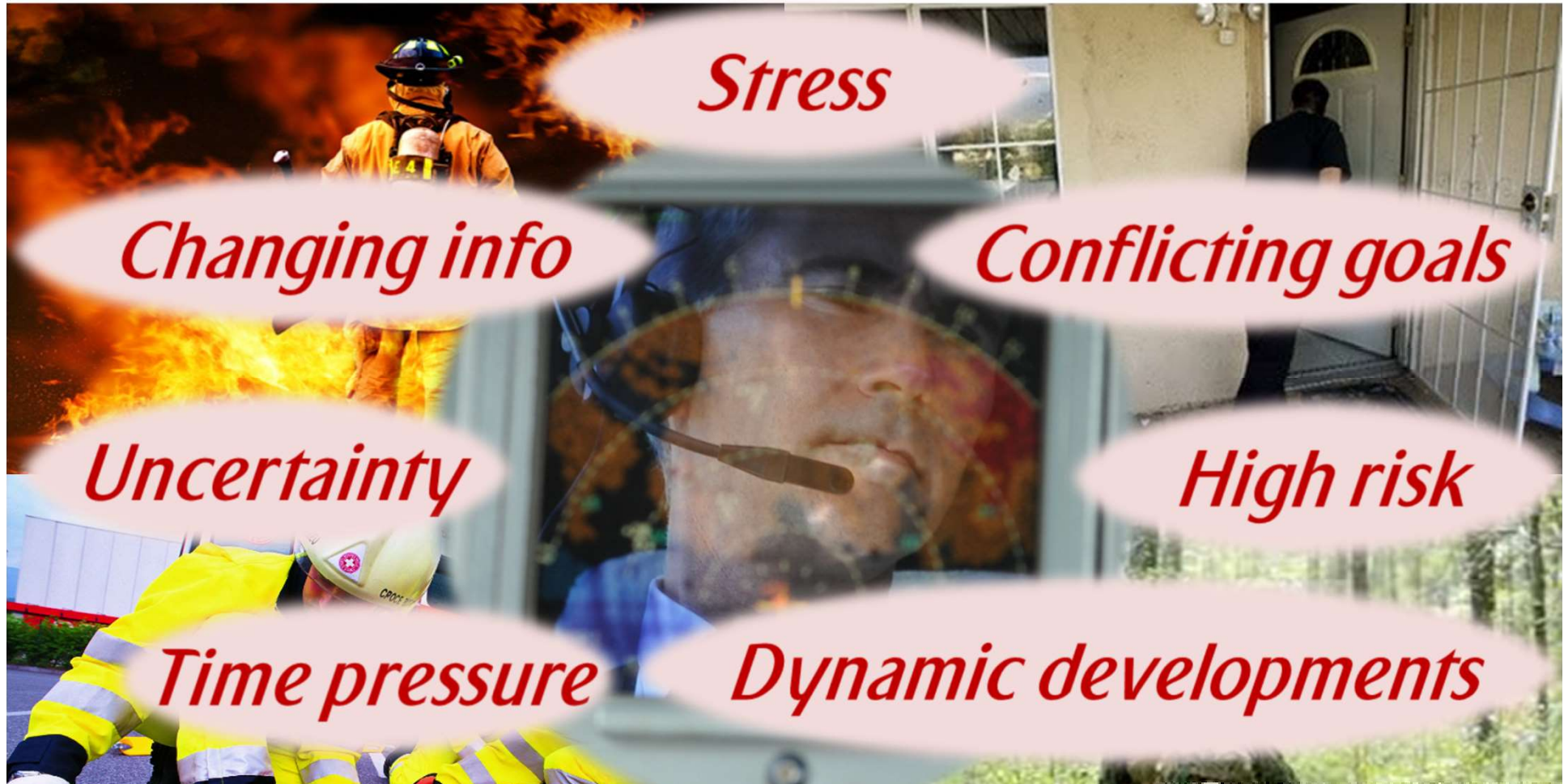
SETUP

- Clear trigger (s)
- Time is **CRITICAL**
- No competing info

TO DO

- Identify trigger
- Fast/directed actions
- Focus on actions, avoid distractions

Natural Decision Making



How experts make decisions in situations with...

Natural Decision Making



Ok, it looks like we have a...

Ok, we could do this

If we do, then we will have to

- **Situation recognition**
- **Serial option evaluation**
- **Mental simulation**

The aim is for a "good enough" decision

Rational Decision Making



Rational Decision Making



Setup	To Do
Clear goals Lots of time Complete info	Prios / Info Analyse options Use time

Decision Making Models



Assess

- **A - N - C!**
- Understand the problem
- Look at as many options as possible
- Do not rush

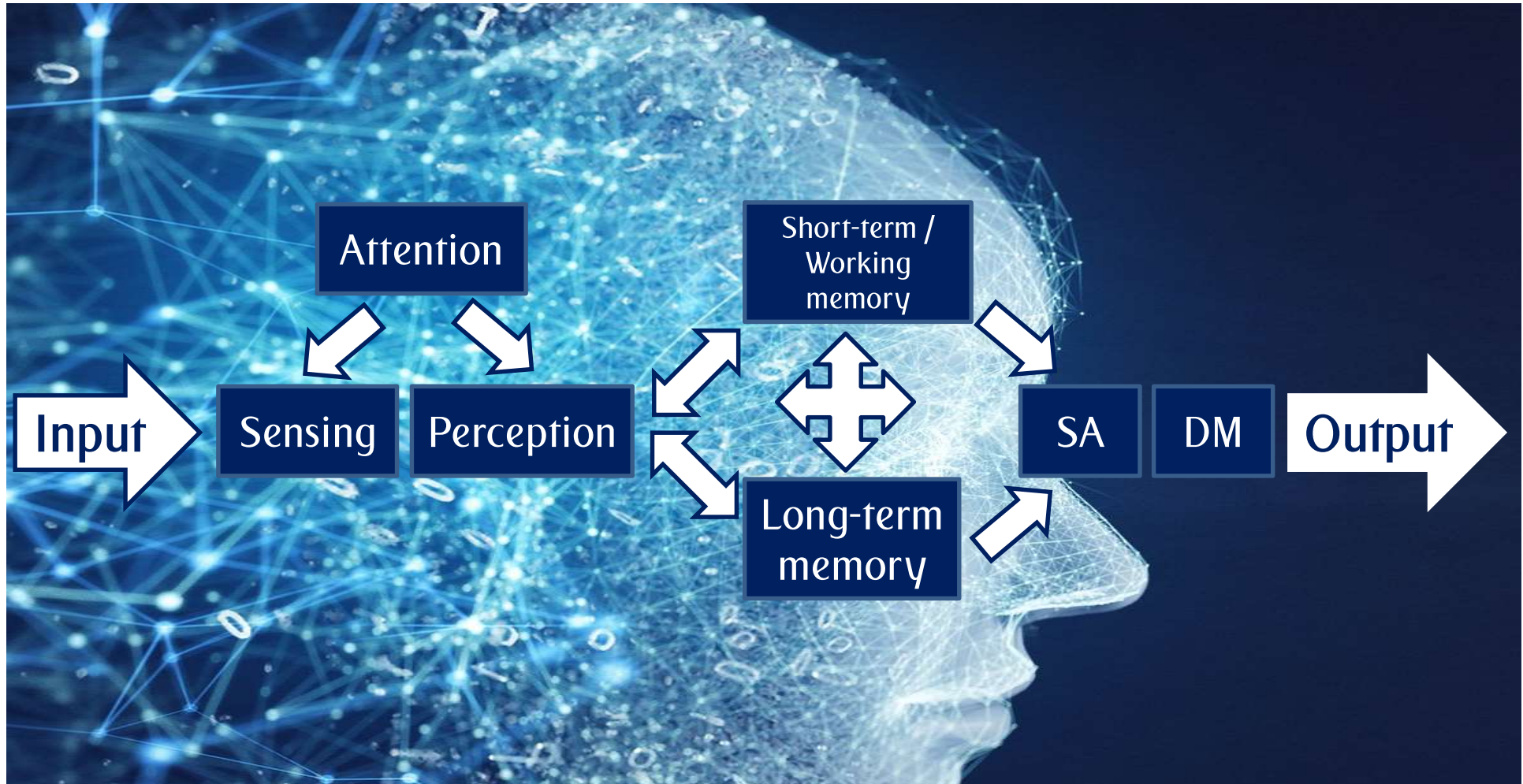
Action

- Keep partner in the loop
- Implement decision
- If need - stop checklist

Manage

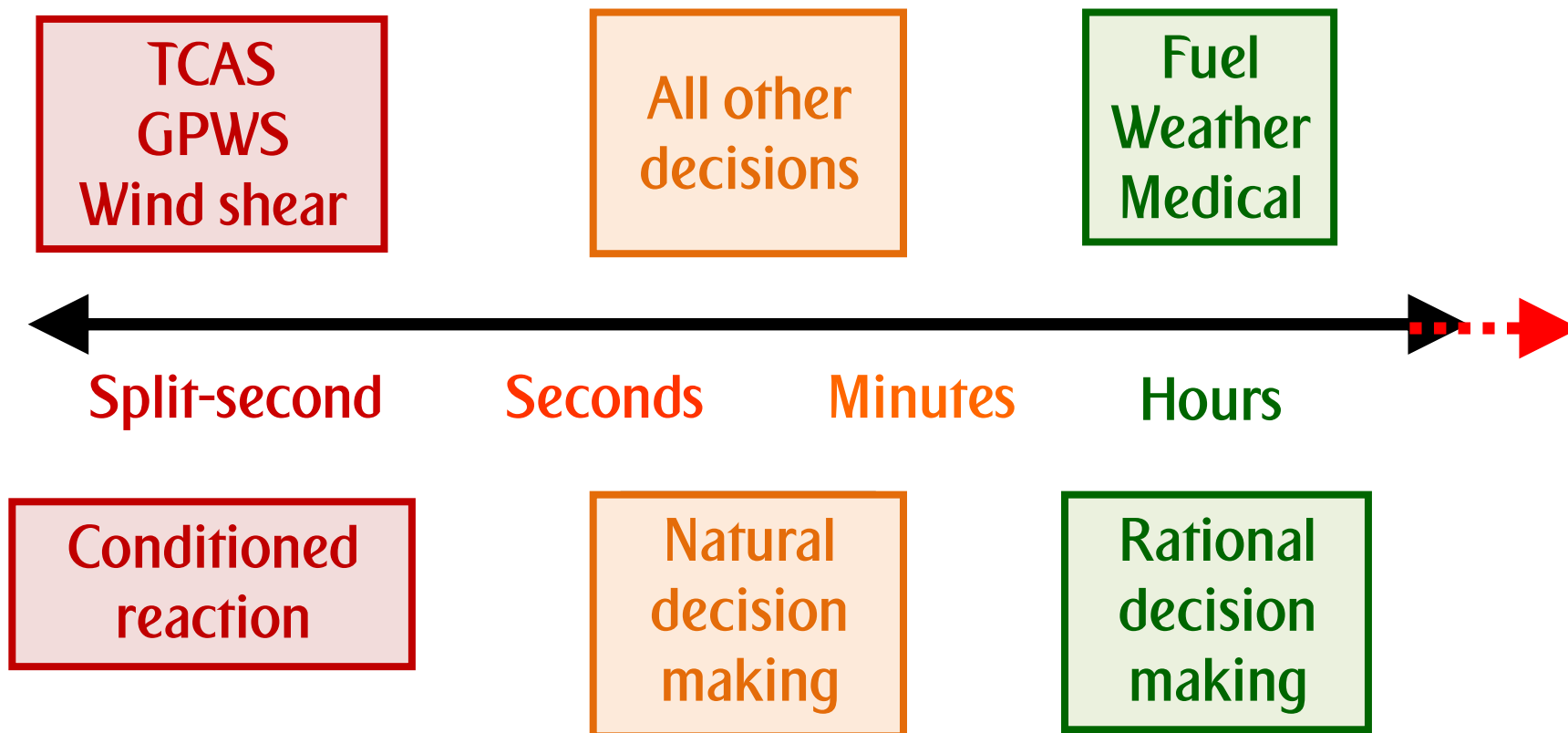
- Address the needs of the task and of people
- Use NITS to brief others
- Follow up - think of consequences

Information Processing



An expert knows what they are doing while they are doing it, this requires the ability to "think about what you are thinking about"

Decision Making



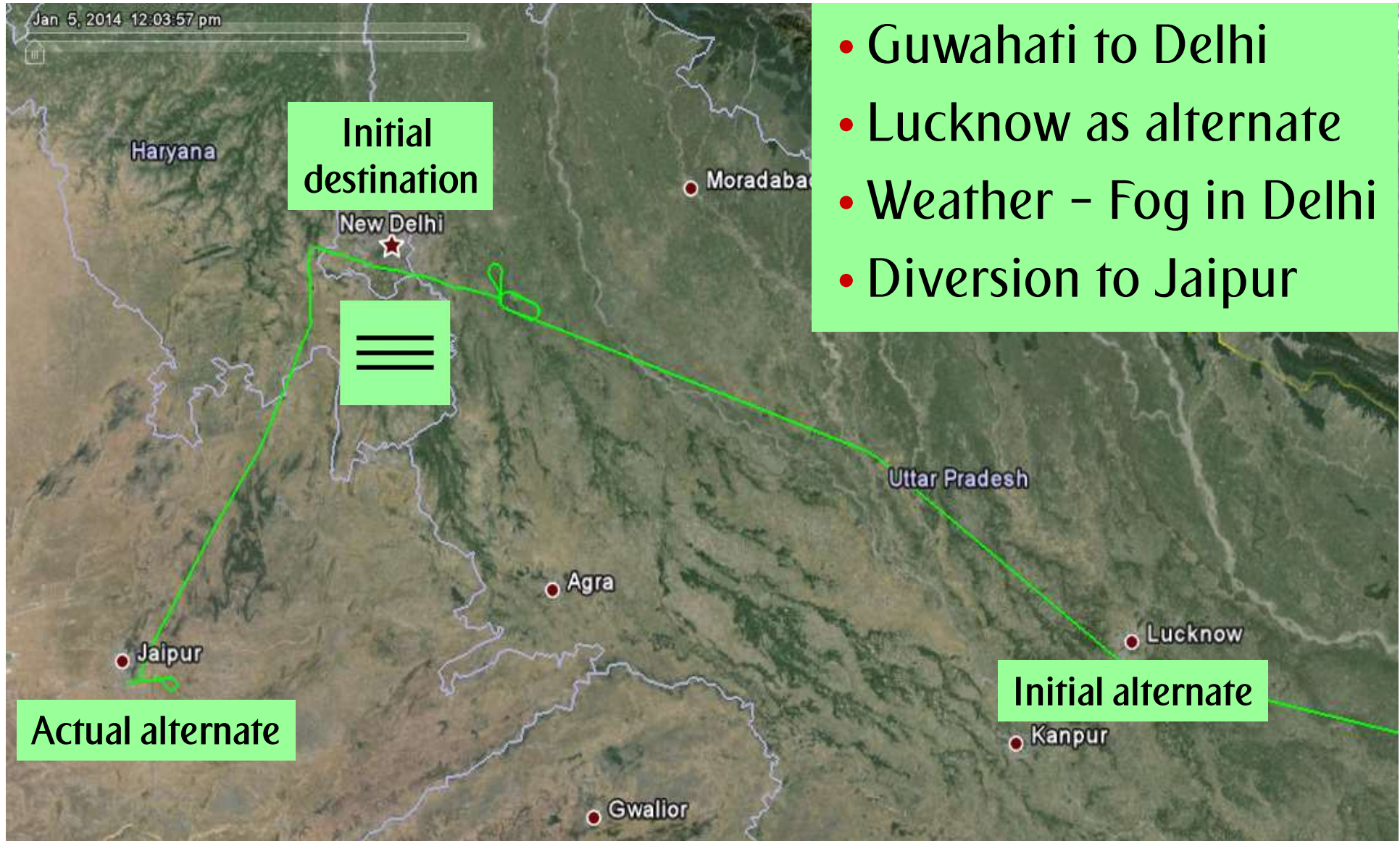
Decision Making



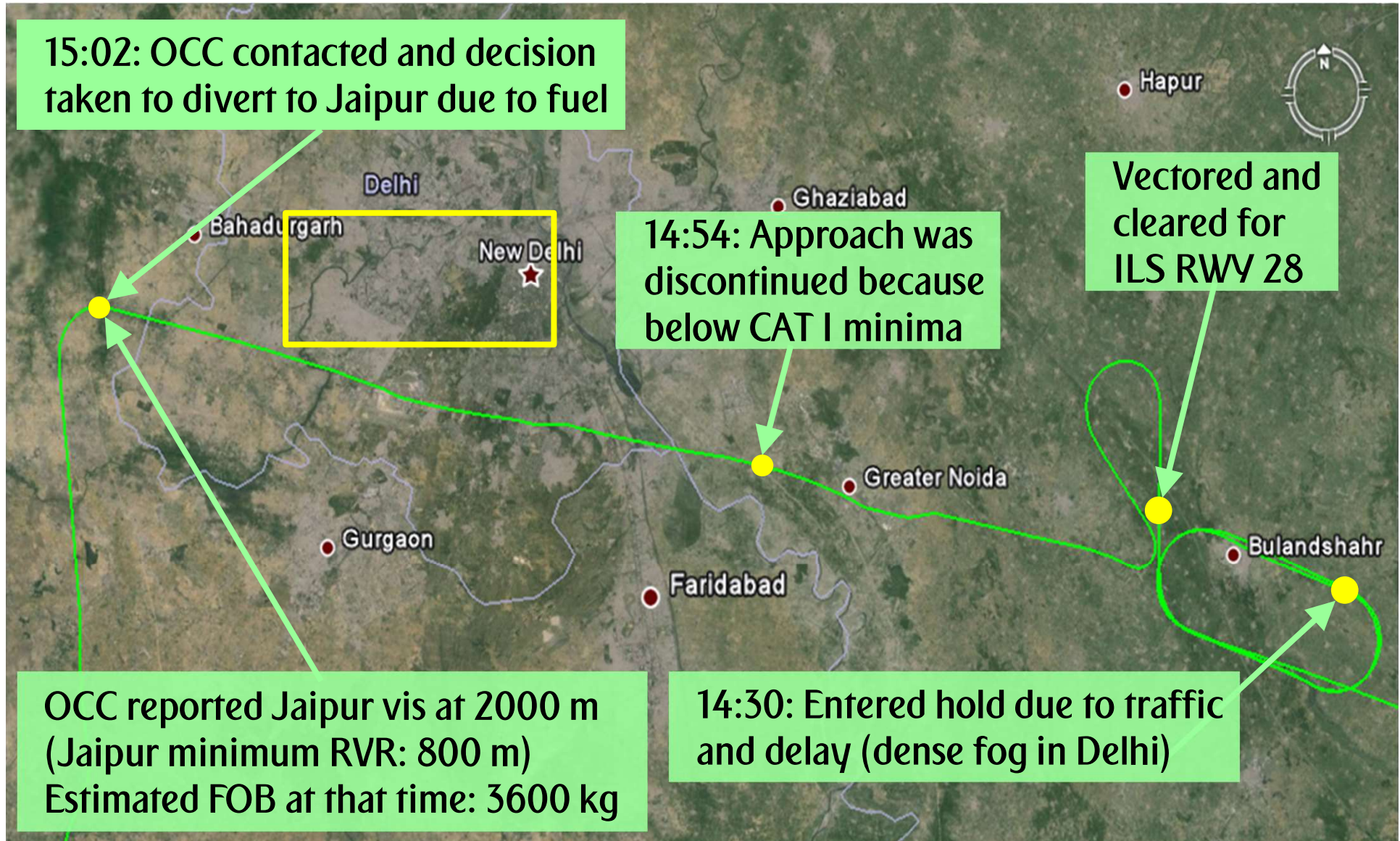
Conditioned reaction	Natural decision making	Rational decision making
<ul style="list-style-type: none"> • Identify triggers • Fast/directed actions • Focus on actions, avoid distractions 	<ul style="list-style-type: none"> • Recognise cues • Serial option evaluation • Mental simulation 	<ul style="list-style-type: none"> • Clarify priorities, analyse options • Make use of time • Reflected choice
⇒ Correct /fast reaction	⇒ "Good enough" decision	⇒ Optimal decision



Case Study: A320 from GAU to DEL



Case Study: A320 from GAU to DEL



Case Study: A320 from GAU to DEL



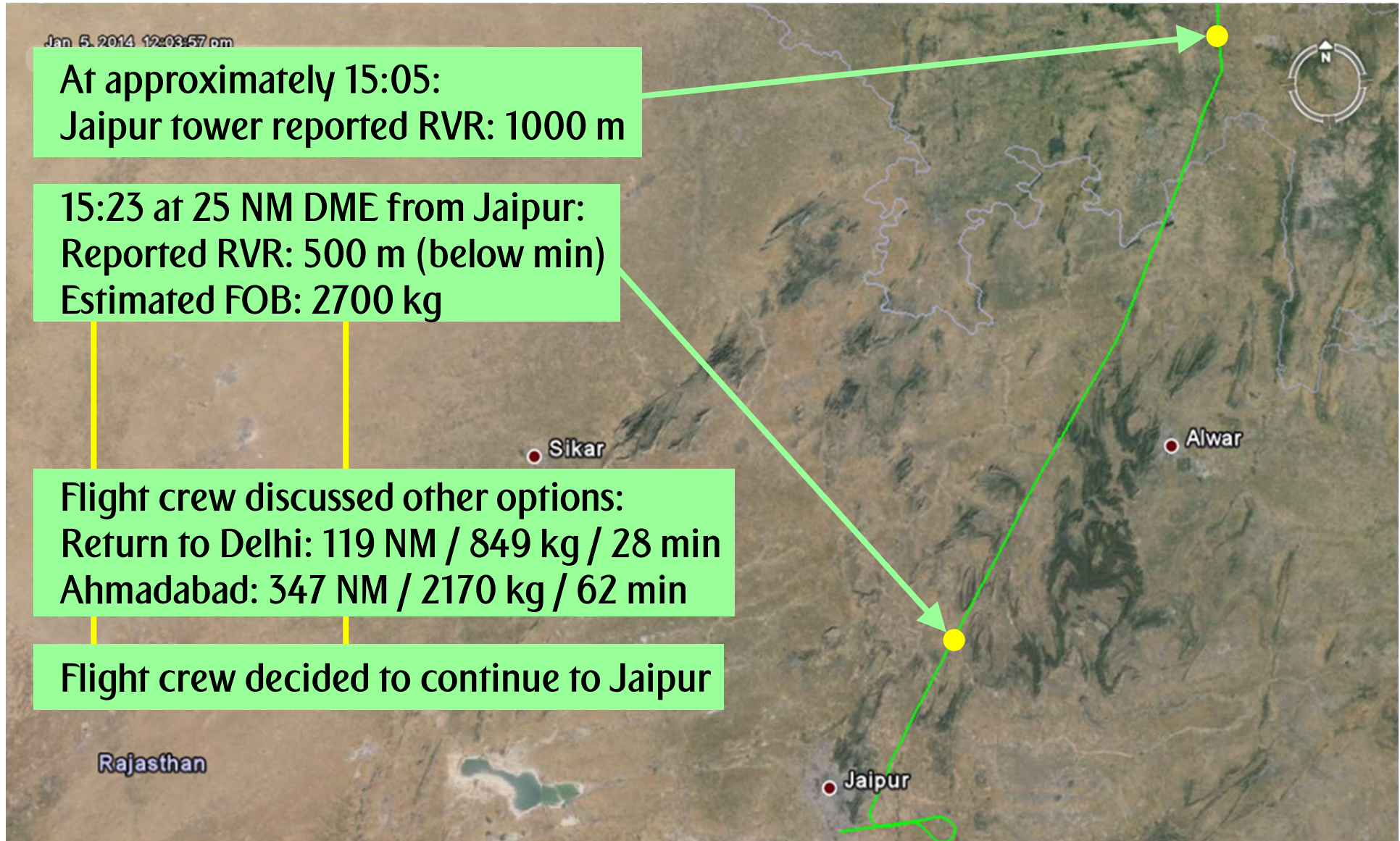
Jan 5, 2014 12:03:57 pm

At approximately 15:05:
Jaipur tower reported RVR: 1000 m

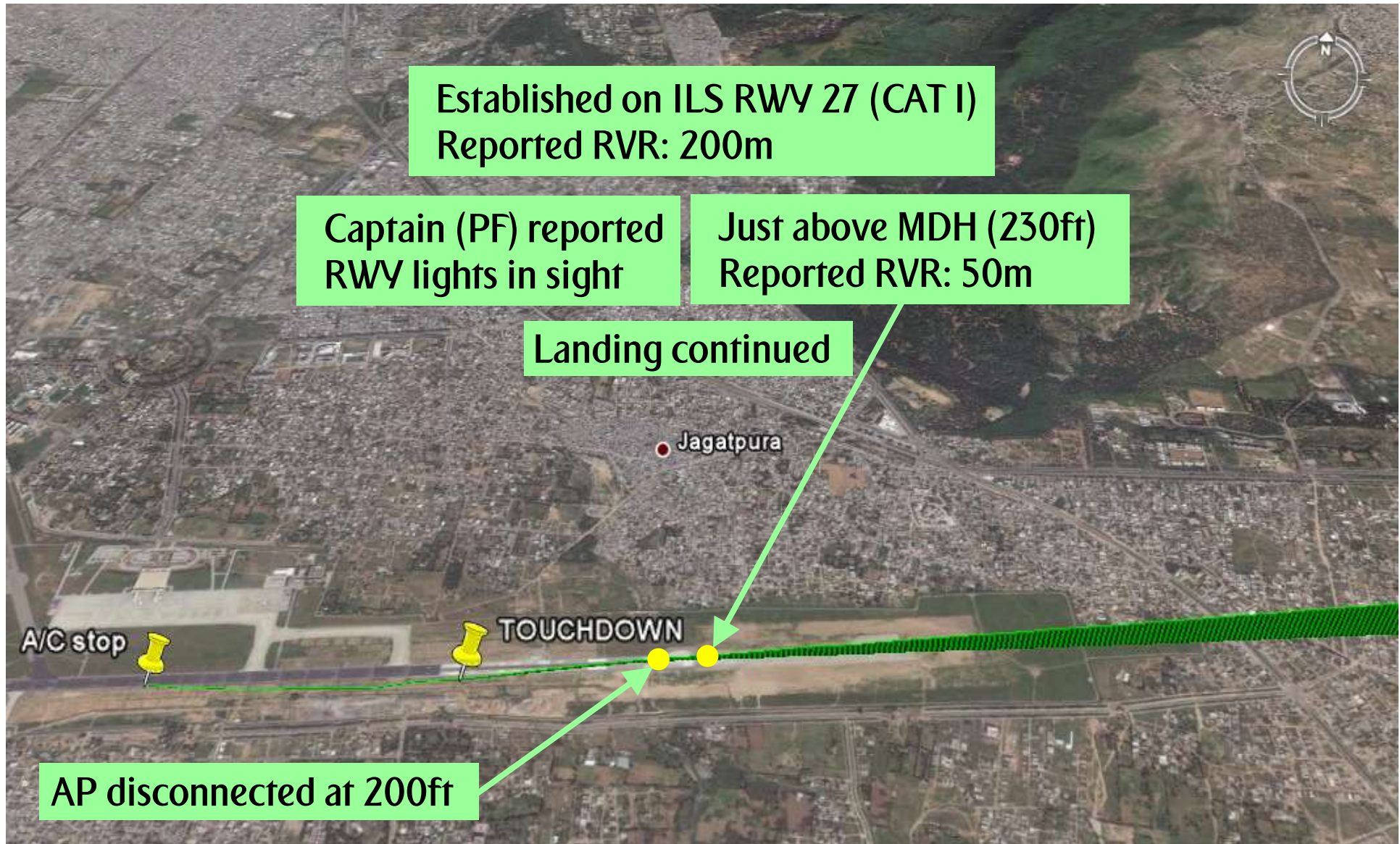
15:23 at 25 NM DME from Jaipur:
Reported RVR: 500 m (below min)
Estimated FOB: 2700 kg

Flight crew discussed other options:
Return to Delhi: 119 NM / 849 kg / 28 min
Ahmadabad: 347 NM / 2170 kg / 62 min

Flight crew decided to continue to Jaipur



Case Study: A320 from GAU to DEL



Case Study: A320 from GAU to DEL



Case Study: A320 from GAU to DEL



Decision Making Errors



- Conflicting goals
- No recognition of situation
- ambiguous cues
- Risk is underestimated
- Consequences not
anticipated/evaluated



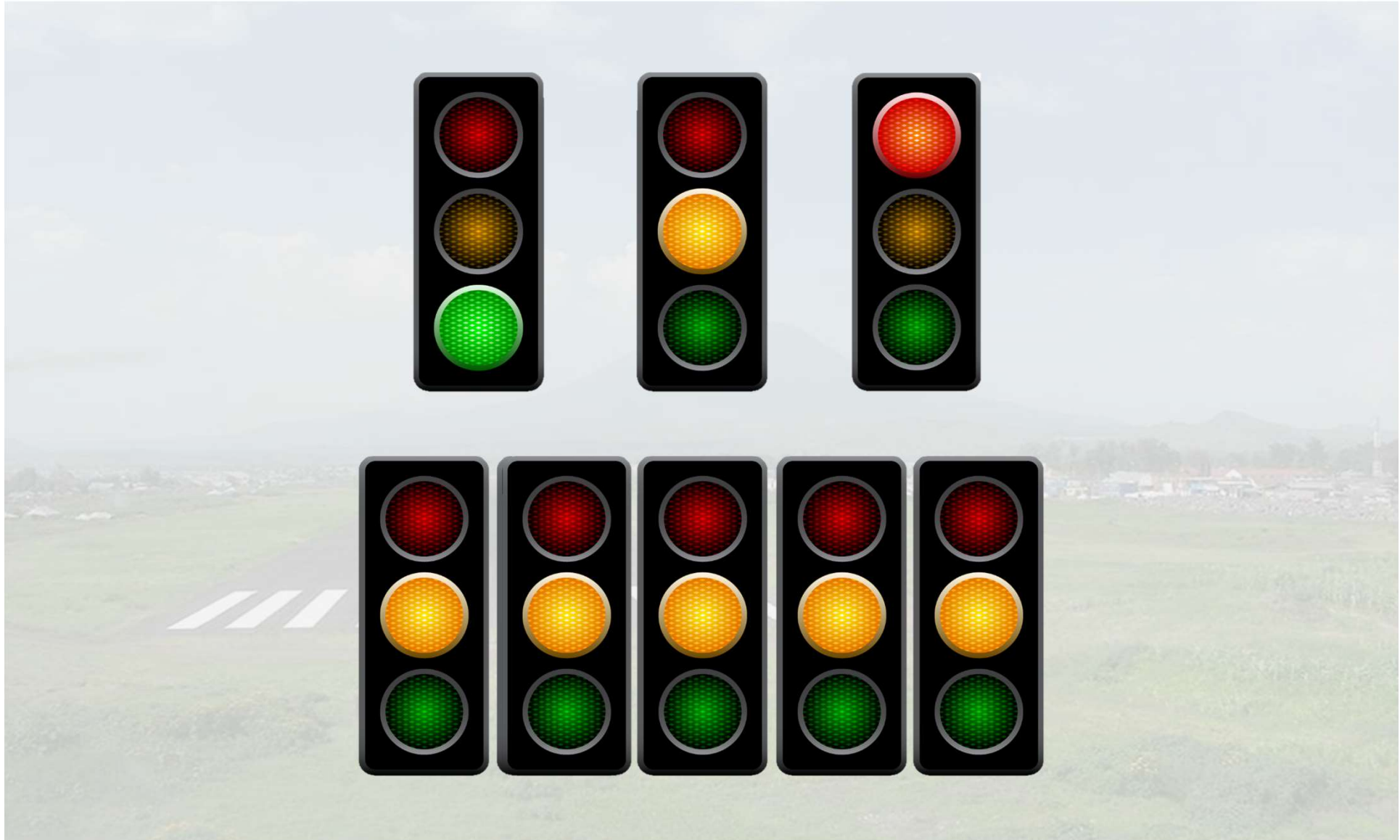
Conflicting Goals

Urgency before importance?



Manage workload, have a routine for updating overview and review of priorities

Recognition and Risk



Consequences



Not anticipated

"Normal operations"
Things that can go bad
usually goes well

"What if?"

Not evaluated

What happen rarely is
difficult to evaluate
Not wanting to think of
things going wrong

"Worst case?"

What is going on?



CAUTION
UNDER
PRESSURE

"Relative risk"?
How reset?

CAUTION
COMFORT
ZONE



Scenario Based Training



- Most simple simulation – "Telling a story"
- Building of scenarios based on real events
- Step-by-step forward, with decision points
- Add expert answers = "Shadow box" method
- Proven to be effective training

Emergency Descent



WPT	TRM	DIST	WIND	FL	TAS	SP/M	STM	ETA		REMF
AWY	ITT		SR/IDEV	MORA	W/C	TROP	ATM	RTA	ATA	MINR
UL124	=	295	043	26/070	488	860	006
BONAM	+	301		01/M04	134	M057	39	0220	61.3

*** DEPRESSURISATION DIVERSION ***
DP N3826.8 E04322.2 - BONAM PLUS 050 NM
BEFORE DP - TURN RIGHT AND DIVERT DIRECT TO OITT
AFTER DP - TURN RIGHT AND DIVERT DIRECT TO UDYZ



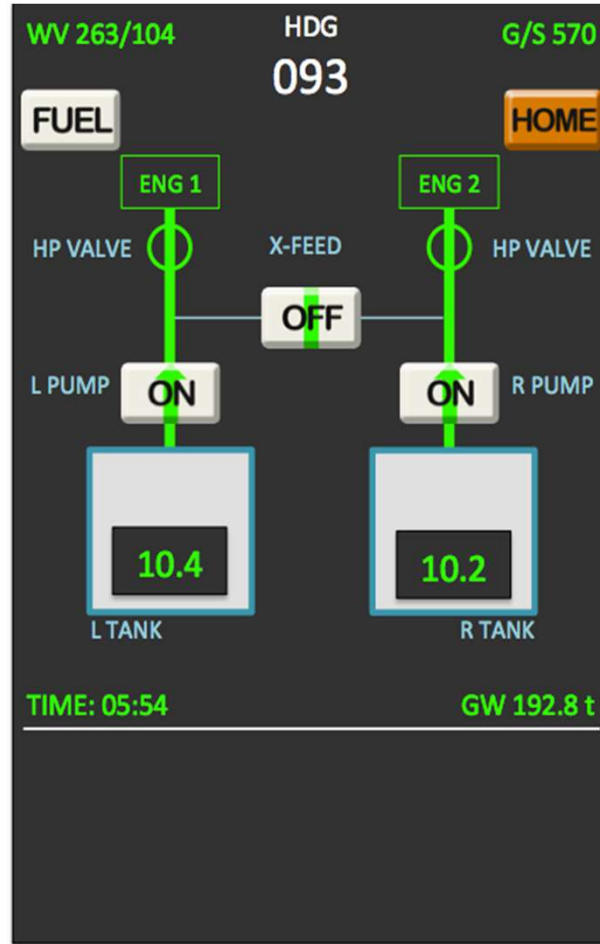
10/08/2021

Emergency Descent





And now...



WV 263/104 HDG 093 G/S 570

APT HOME

NEAREST AIRPORTS

	BRG/DIST	ETA	FUEL REM
CYQX	277/676	07:39	11.5
BIKF	042/868	07:19	12.9
LPLA	162/898	07:41	11.4
EINN	091/1048	07:39	11.5
EIDW	088/1137	07:48	10.7

TIME: 05:54 GW 192.8 t

Buttons: APT, HOME

Scenario Based Training



"Reacting rapidly, Captain Gennotte recalled a television documentary he had seen about a DC-10 crash at Sioux City, Iowa some years before and the techniques employed by Captain Al Haynes and his crew to control their aircraft."

(IFALPA, 2005)

Summary

Understanding Decision Making



Decision Making

- Conditioned – Natural – Rational
- In-depth understanding → Improvement

Decision Making Errors

- Conflicting goals – Ambiguous cues
- Recognising risk – Considering consequences

Scenario Based Training

- "Shadow Box" – training, simple but effective
- Step-by-step scenarios, trained via tablet/phone

Questions & Discussion



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