



**IMPACT OF ENC  
PRODUCTION ON  
BRAZILIAN DHN  
(Diretoria de Hidrografia e Navegação)**

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# ENC in-house production

- DHN (CHM) began to gather knowledge in late 90s;
- Few people were qualified for ENC production;
- Difficulties with English idiom and software tools;
- Lack of in-house expertise;
- No funds for systematic training;
- Few cells produced, none distributed.





# ENC production recently

- technical visits in HOs (UKHO, CHS, IH, SHOA);
- representatives in IHO committees and WG (latest 5 years);
- bilateral agreement with UKHO, including IC-ENC co-operation for ENC distribution;
- investments in people qualification and training;
- Brazilian ENC schema established in 2008 (156 cells);
- Private company contracted in November 2007 for data capture (156 ENCs) to accomplish the ENC coverage by 2010;
- ISO 9001:2000 certification for Nautical Charts Production and Planning (last week).



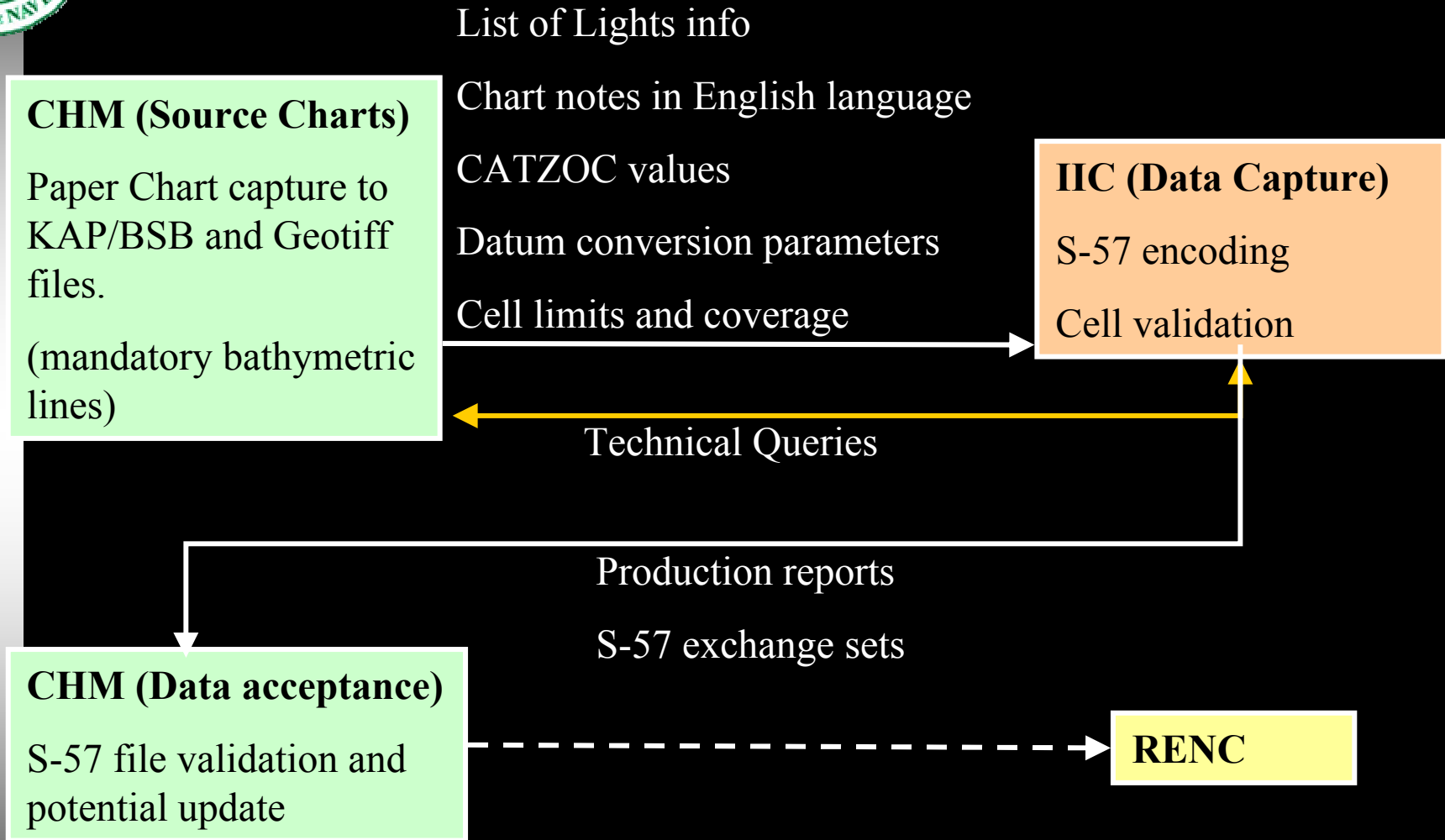
# ENC Planning

	2008		2009	2010
	PLANNED (54%)	PRODUCED (51%)	PLANNED (25%)	PLANNED (21%)
OVERVIEW/ GENERAL	3	3	3	3
COASTAL	11	11	9	6
APPROACH	34	32	17	20
HARBOUR/ BERTH	37	34	10	3

**TOTAL AVAILABLE: 80 of 156 (Oct2008)**



# ENC outsourcing production workflow





# ENC production challenges

- **Metadata collection and organization;**
- **Production Database to resolve inconsistency problems;**
- **New surveys in critical areas with no eligible data;**
- **To keep people proficiency.**



**Thank you ...**