

Mapeamento Urbano

Francisco Henrique de Oliveira

Engenheiro Cartógrafo

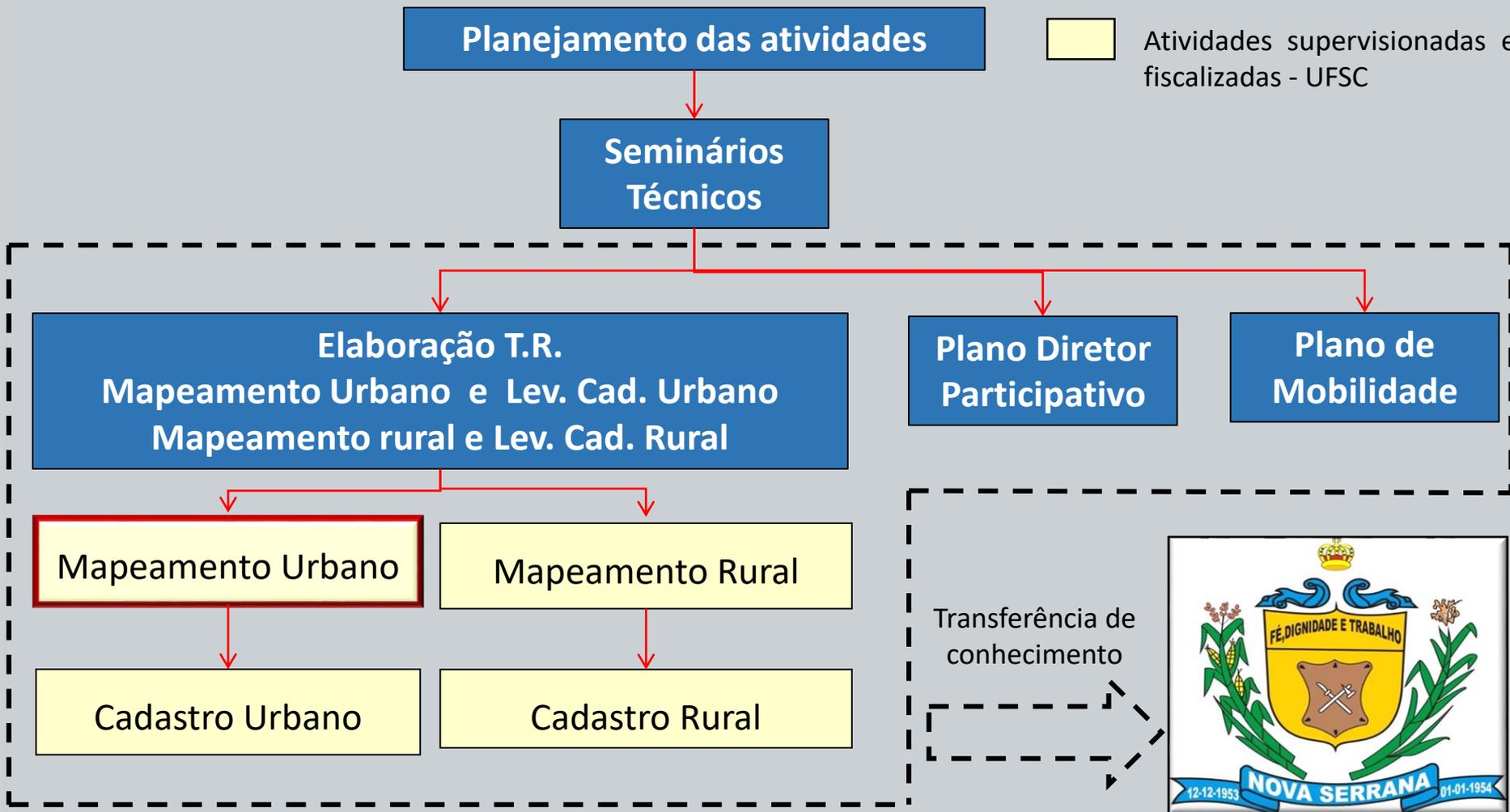


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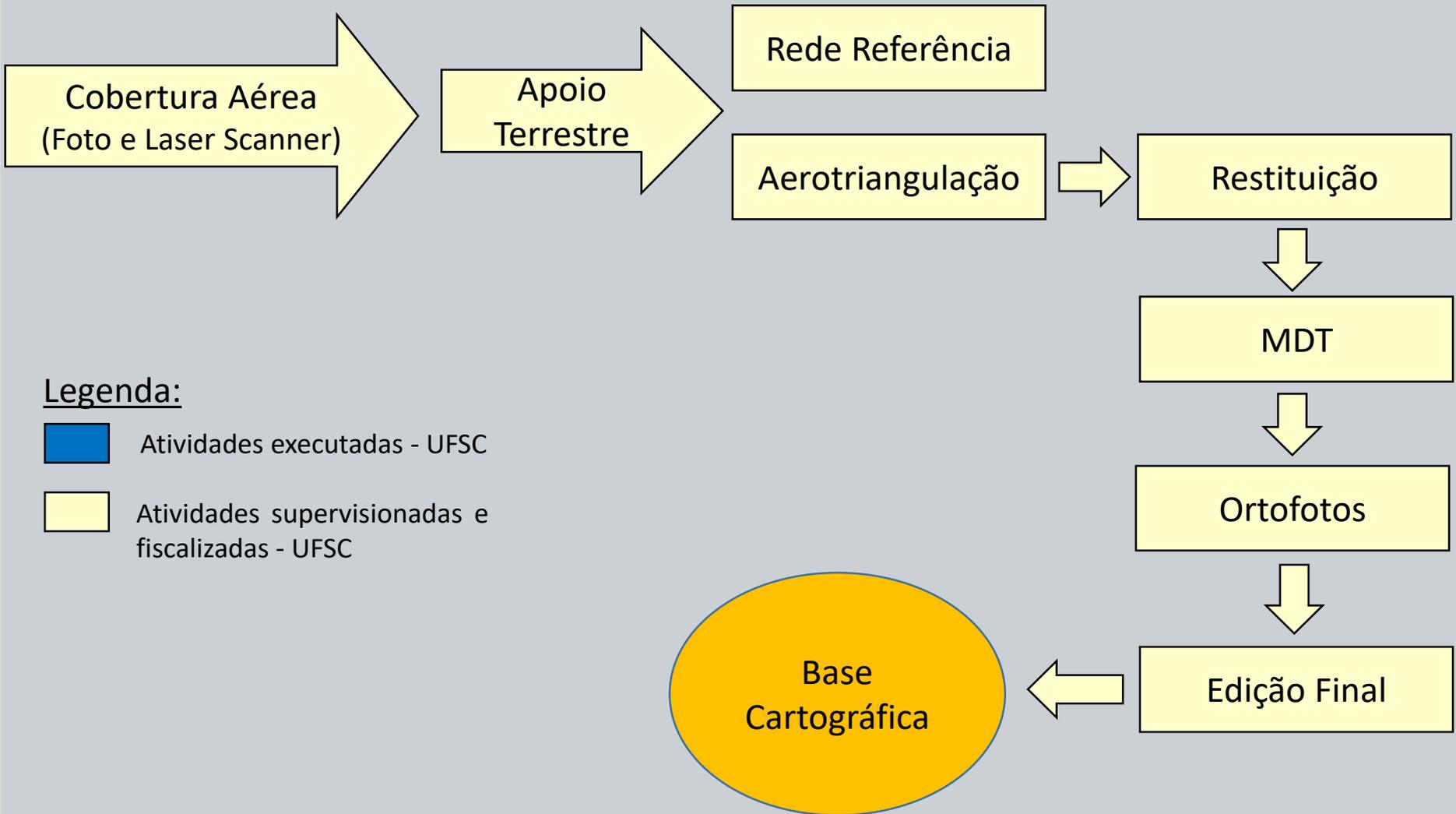
ETAPAS DO PROJETO

Legenda:

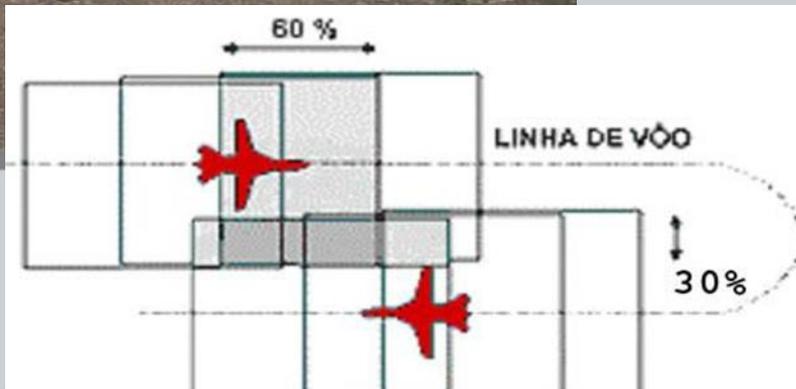
-  Atividades executadas - UFSC
-  Atividades supervisionadas e fiscalizadas - UFSC



Mapeamento Urbano



Cobertura aérea

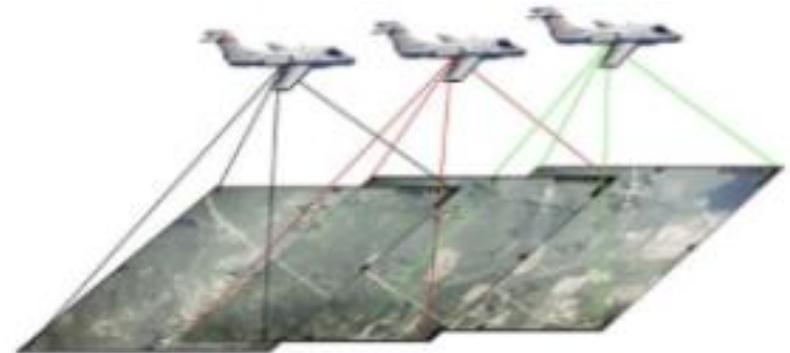
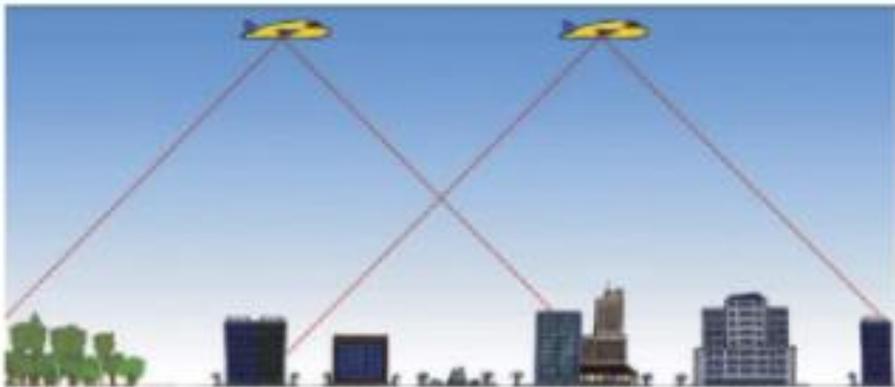


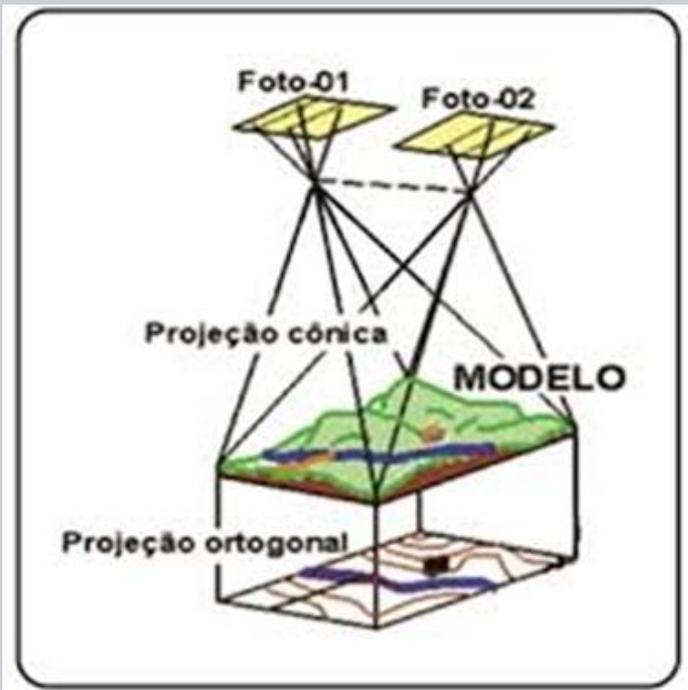
Material

- Aeronave;
- Câmera aerofotogramétrica.

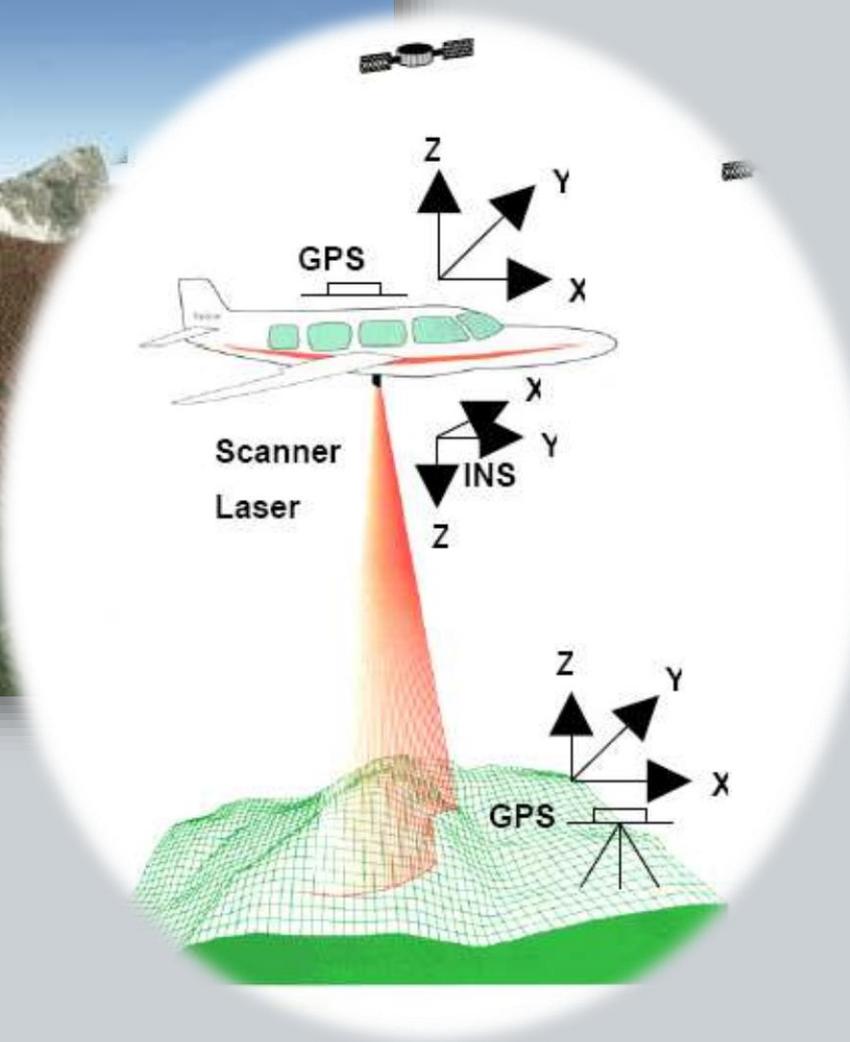
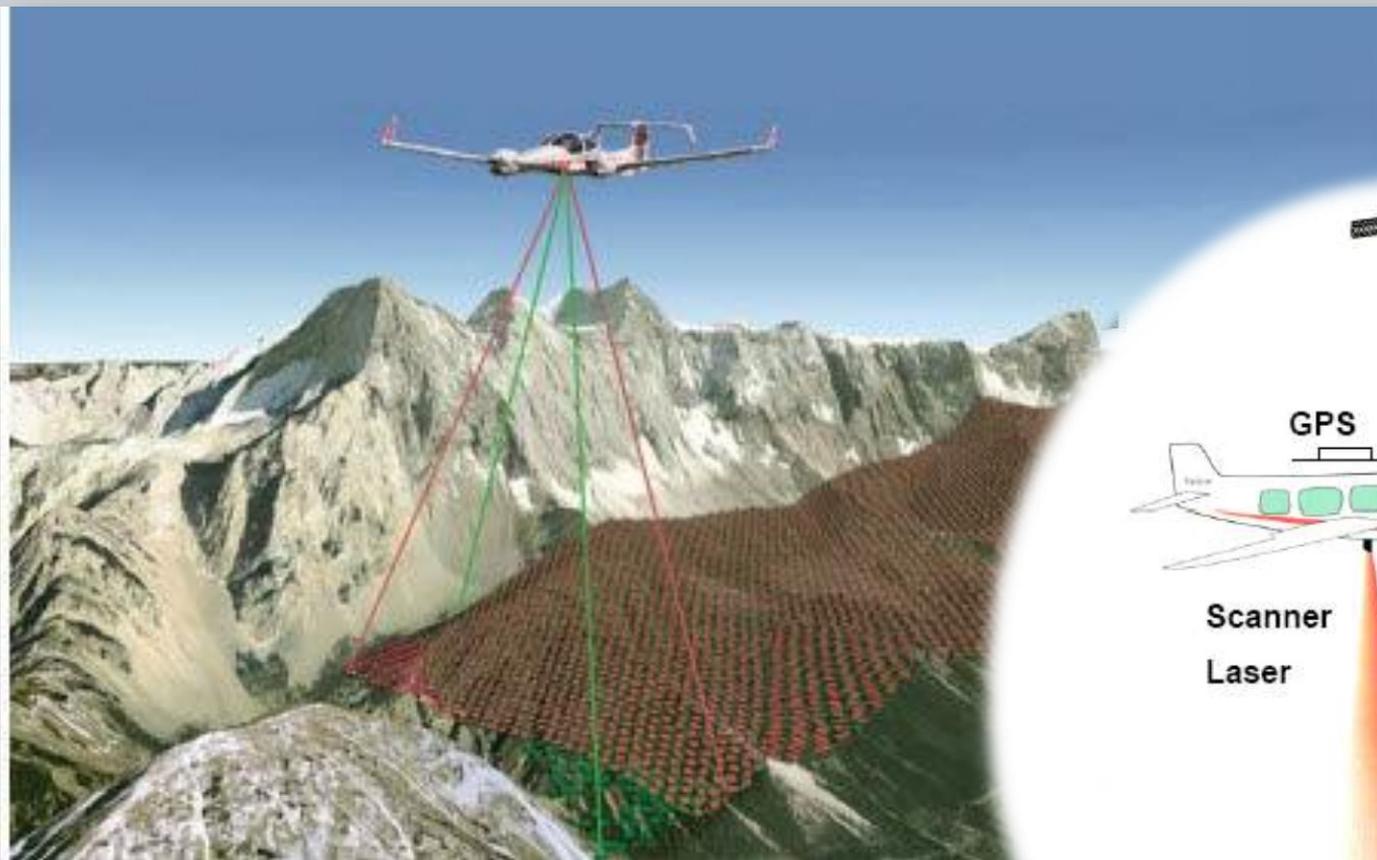
Finalidade

- Plano de Voo;
- Aerofotos.

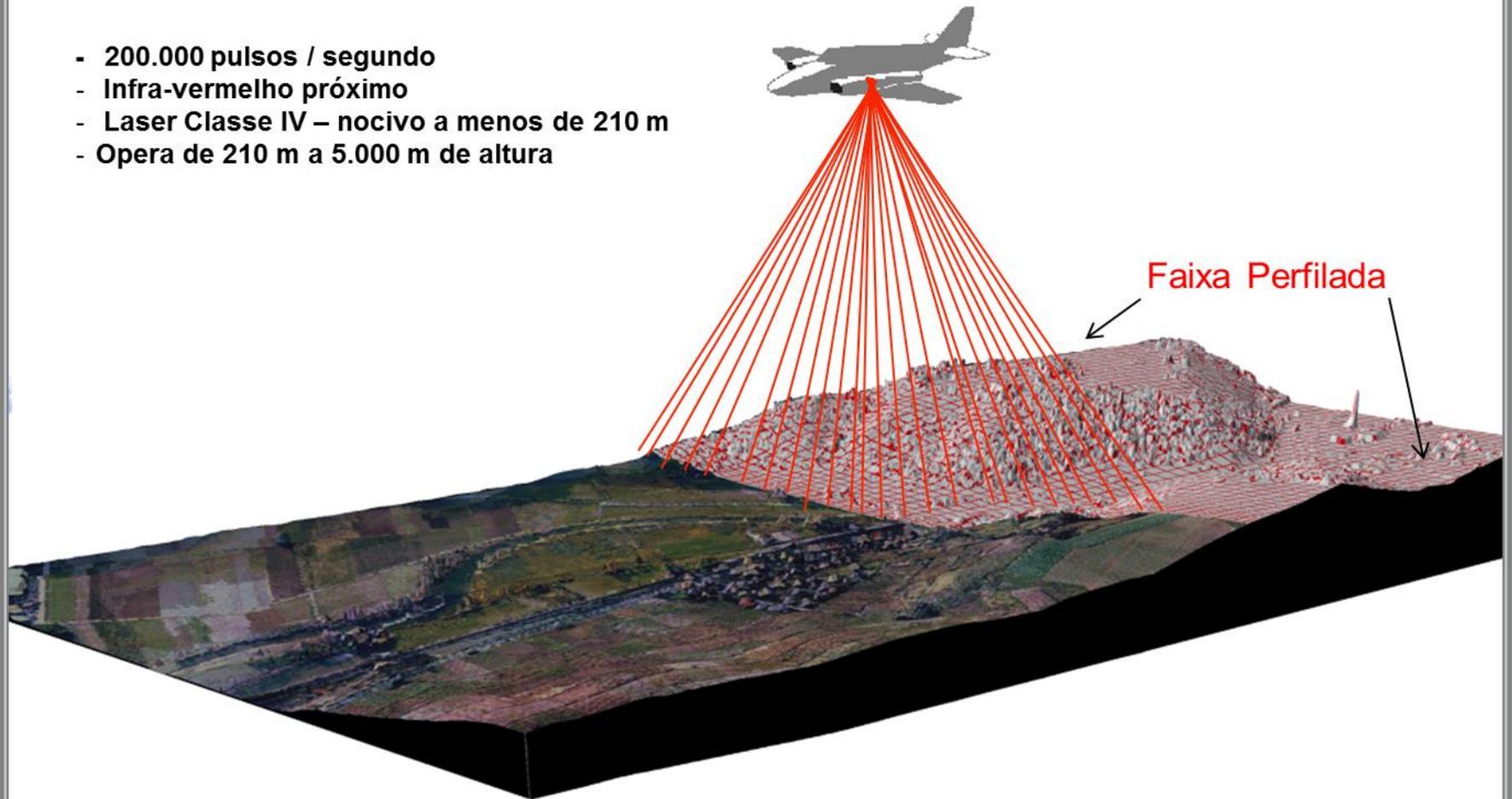




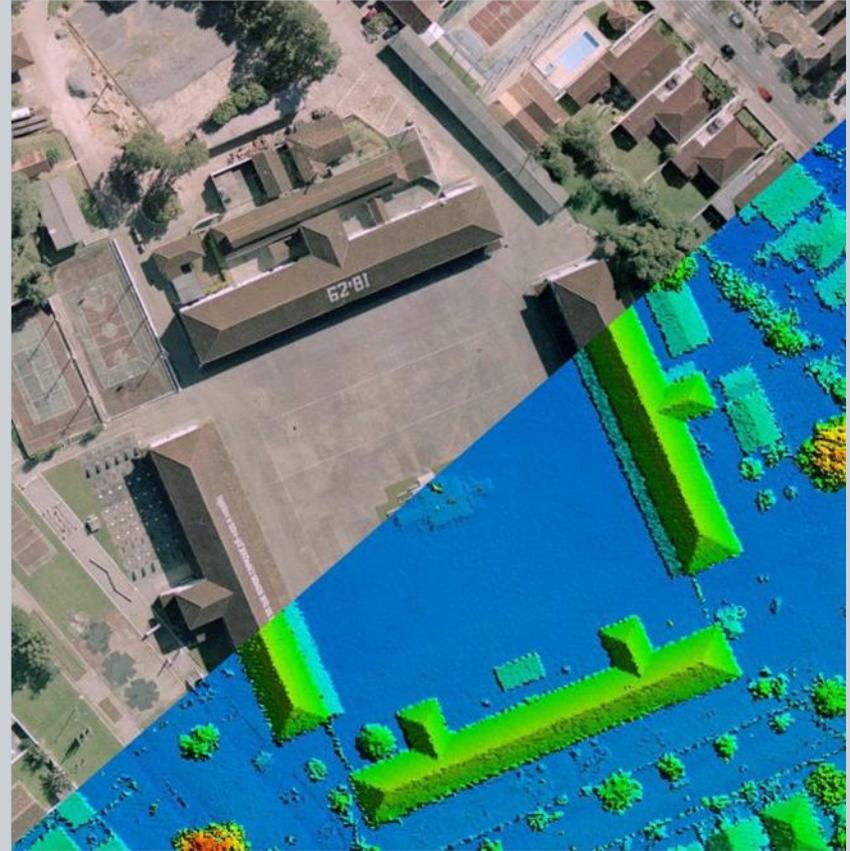
Perfilamento
a Laser



- 200.000 pulsos / segundo
- Infra-vermelho próximo
- Laser Classe IV – nocivo a menos de 210 m
- Opera de 210 m a 5.000 m de altura



Laser Scanner



Laser Scanner



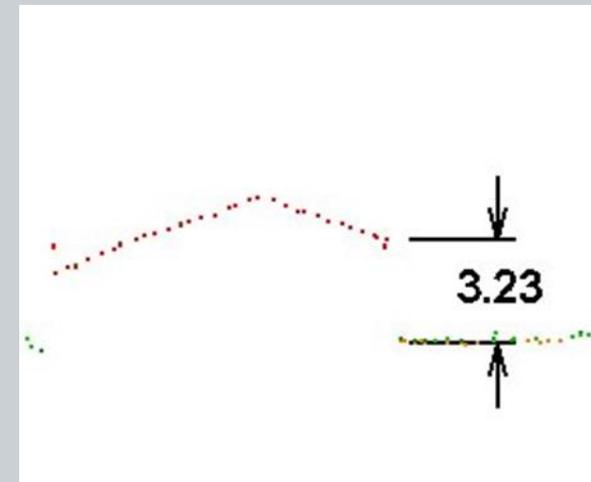
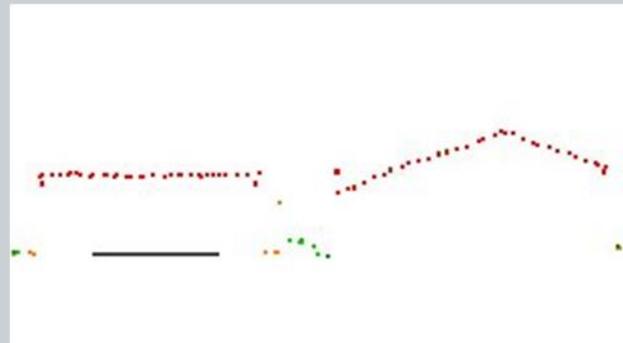
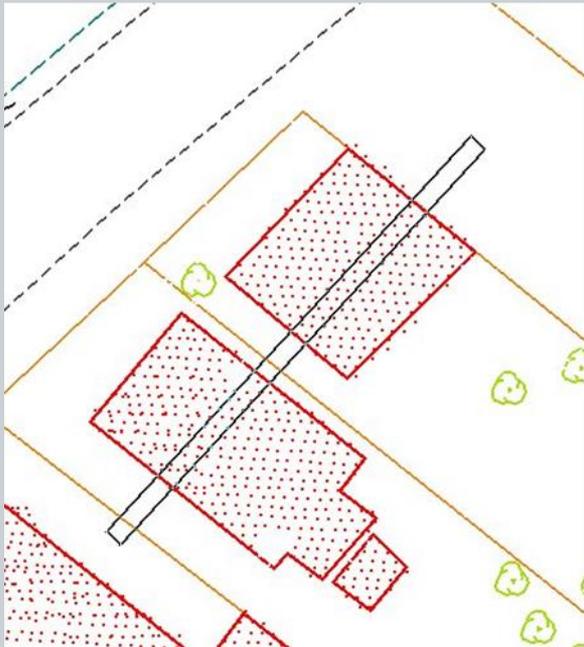
Laser Scanner

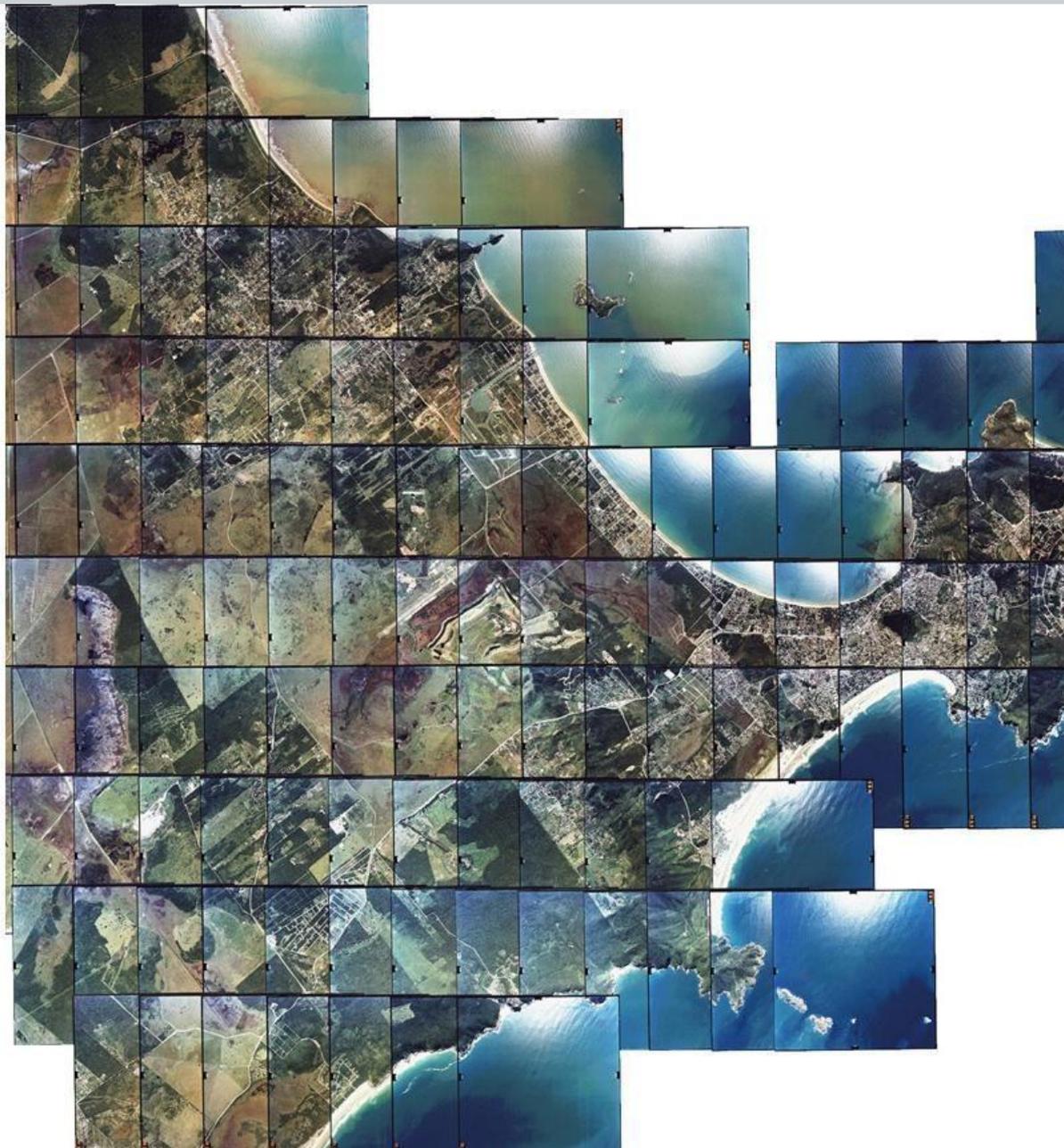
Nuvem de pontos classificada



Laser Scanner

Perfil Edificações





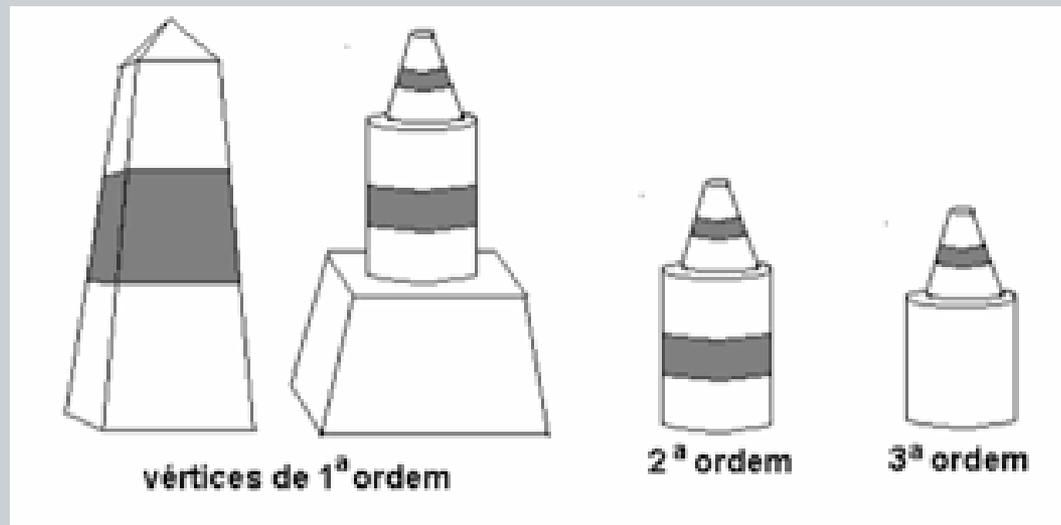
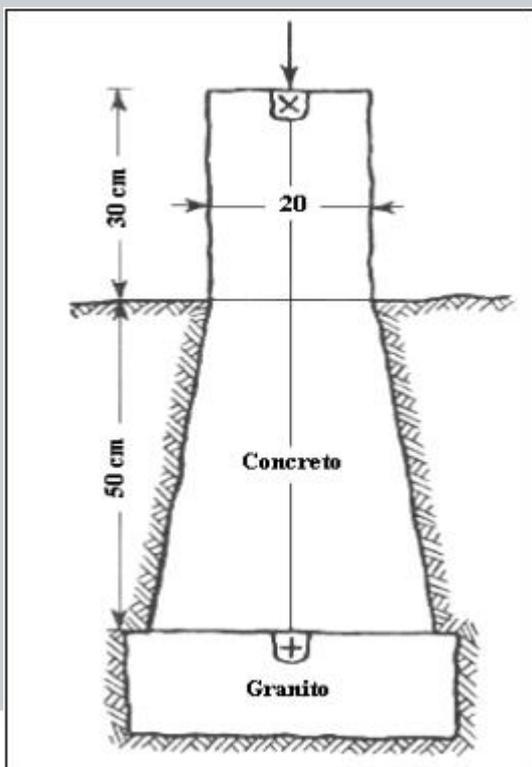
Apoio Terrestre

Material

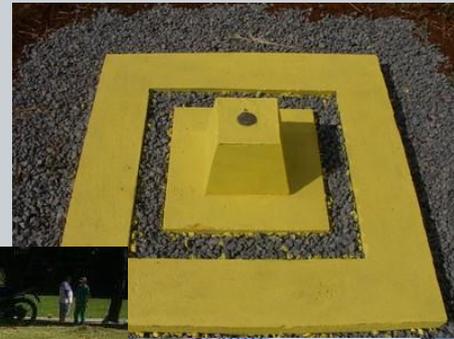
- GNSS;
- Topografia.

Finalidade

- Georreferenciamento;
- RRCM.



Apoio Terrestre



Apoio Terrestre

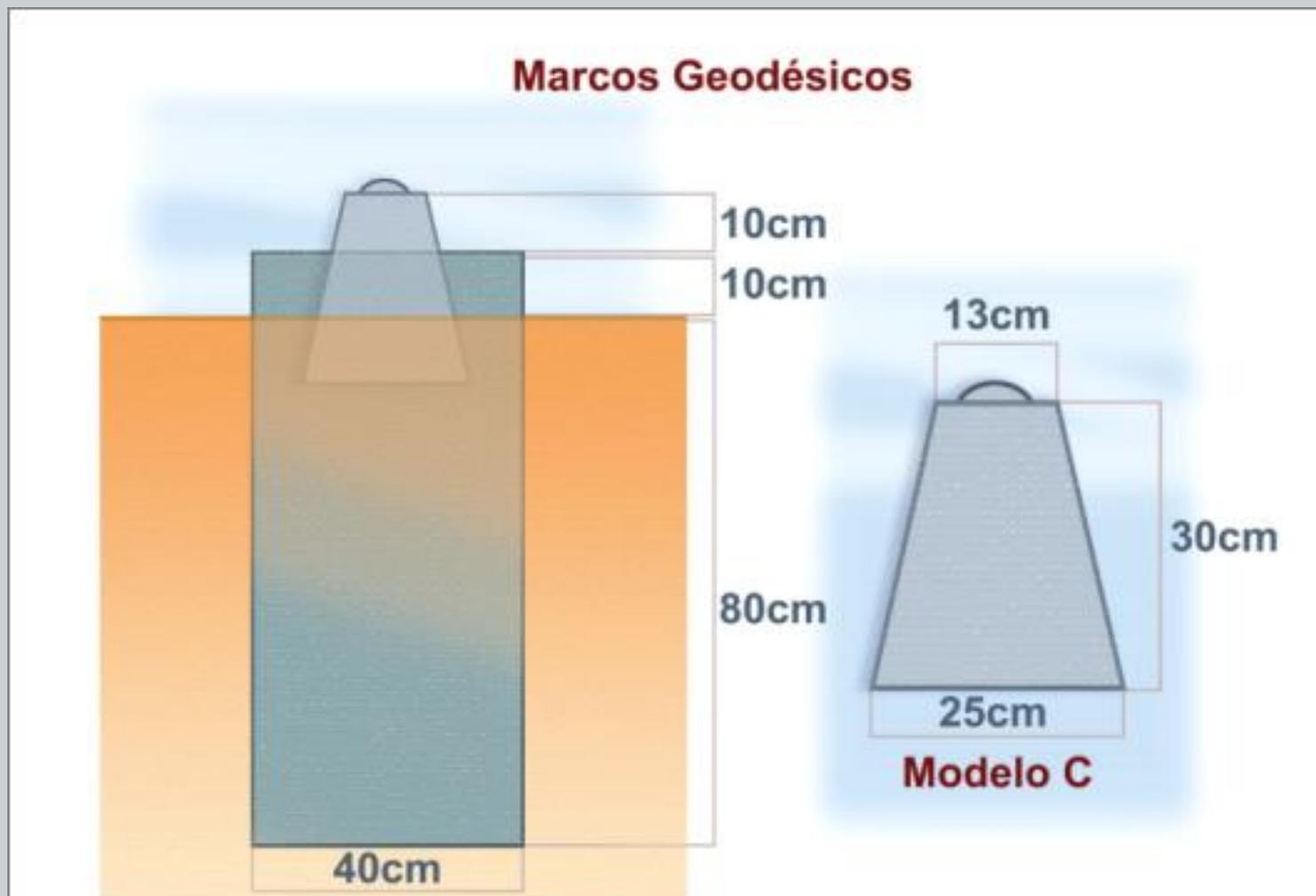
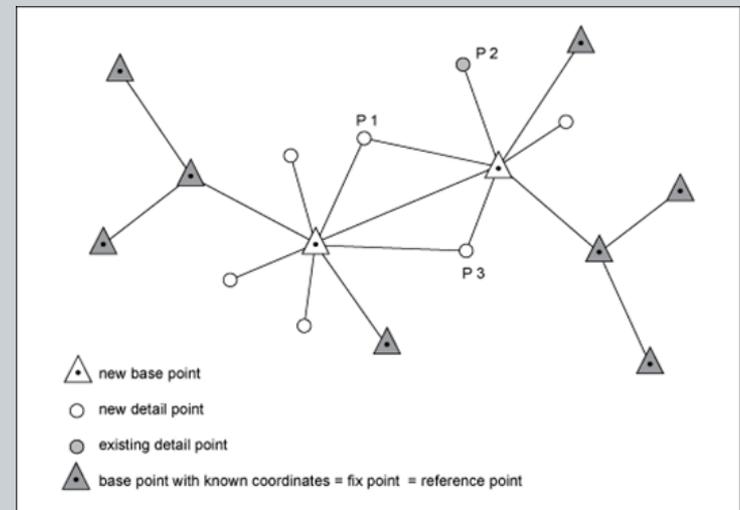
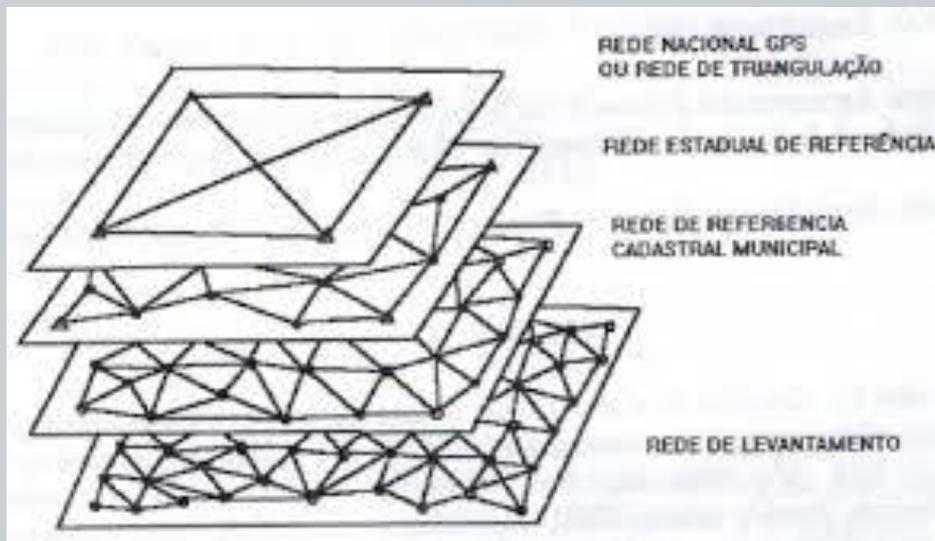


Figura 2 – Modelo de marco geodésico em padrão definido pelo IBGE
Fonte: http://www.ibge.gov.br/home/geociencias/geodesia/pdf/padronizacao_marcos.pdf

- Apoio Terrestre
Apoio Básico
Apoio Suplementar



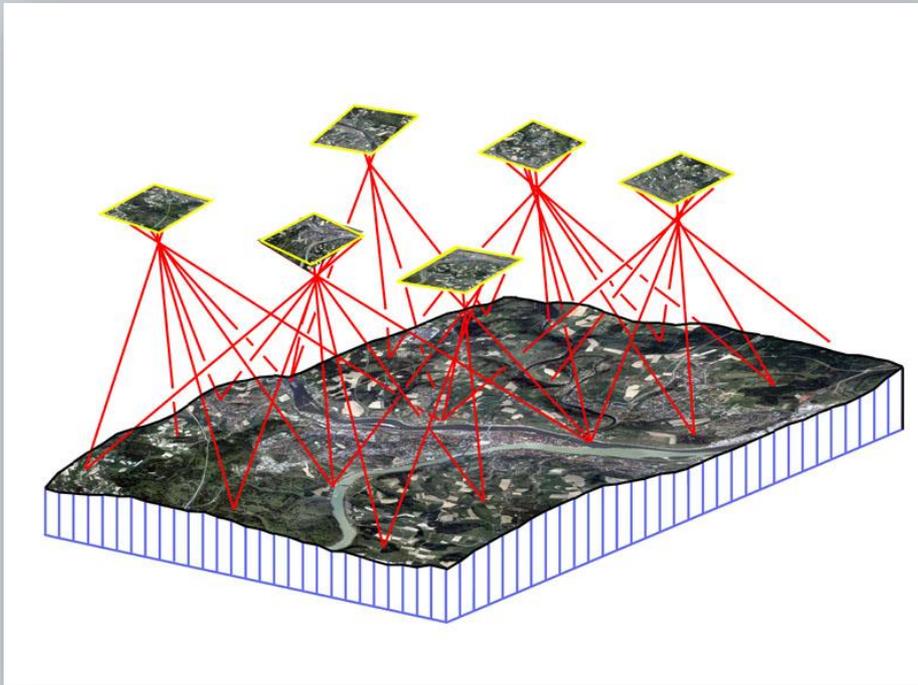
Aerotriangulação

Material

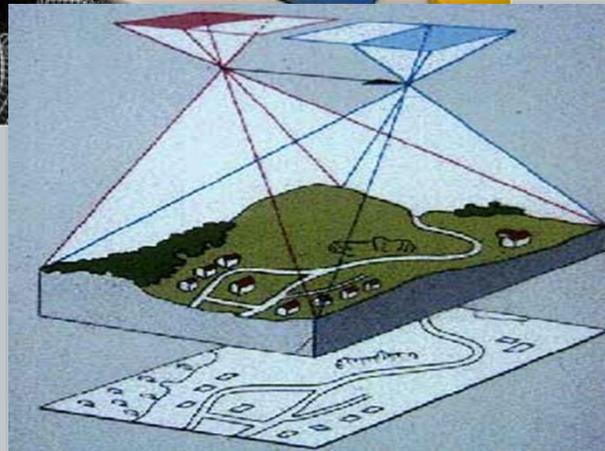
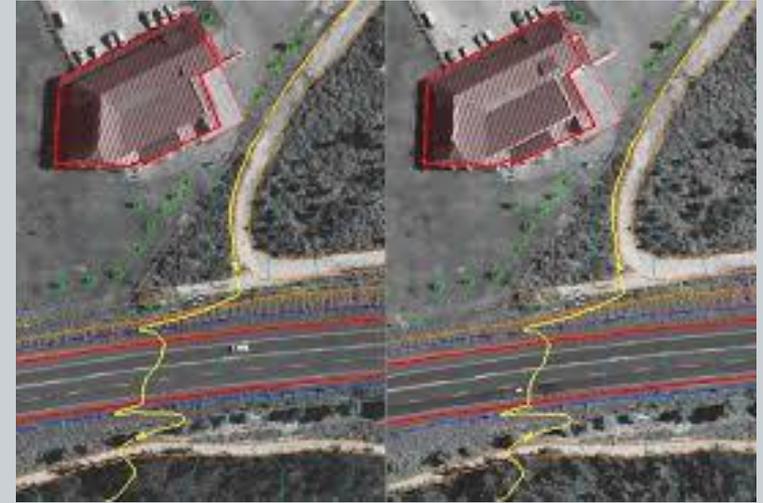
- Aerofotos;
- Pontos de apoio/controlado/enlace.

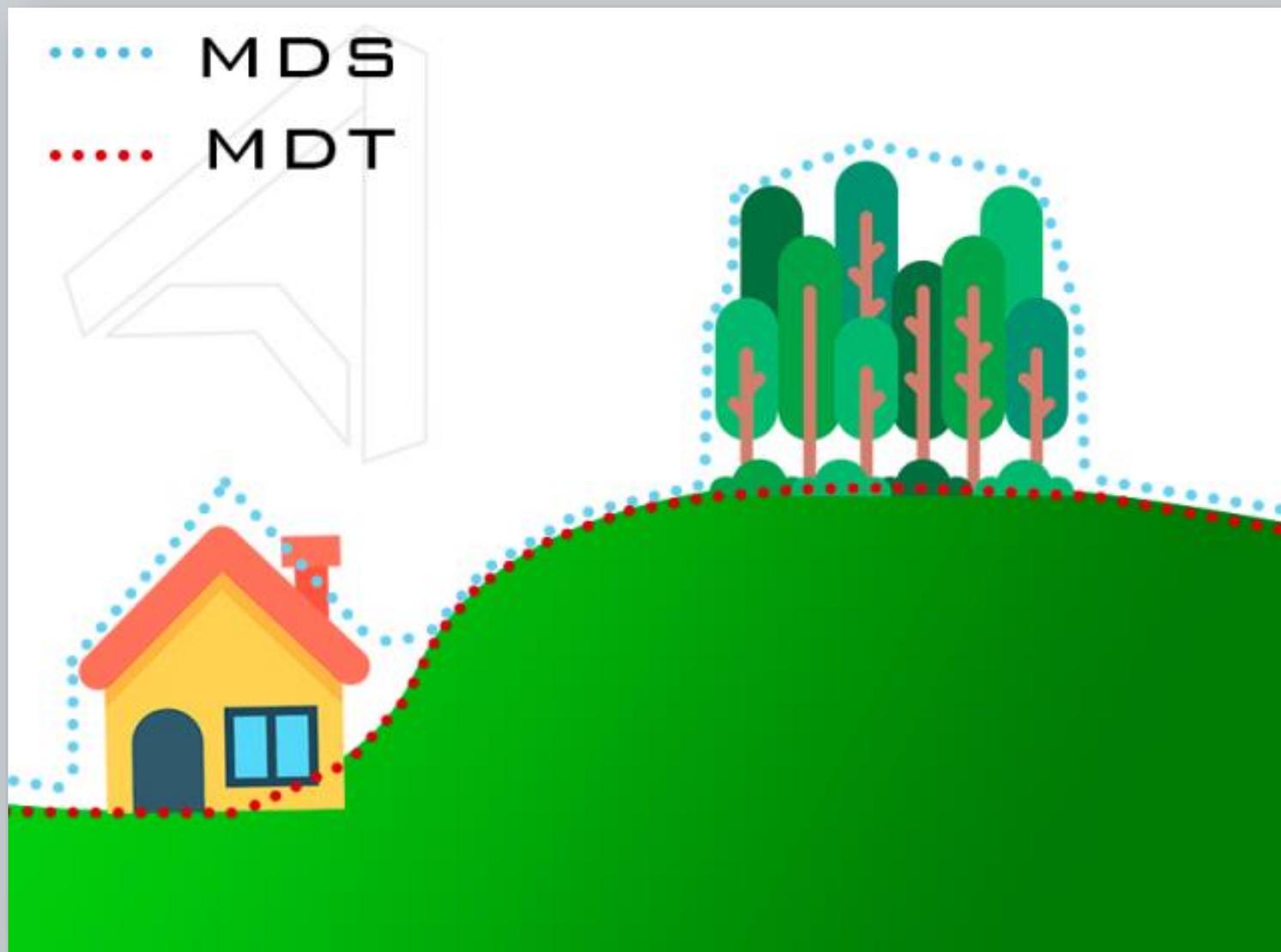
Finalidade

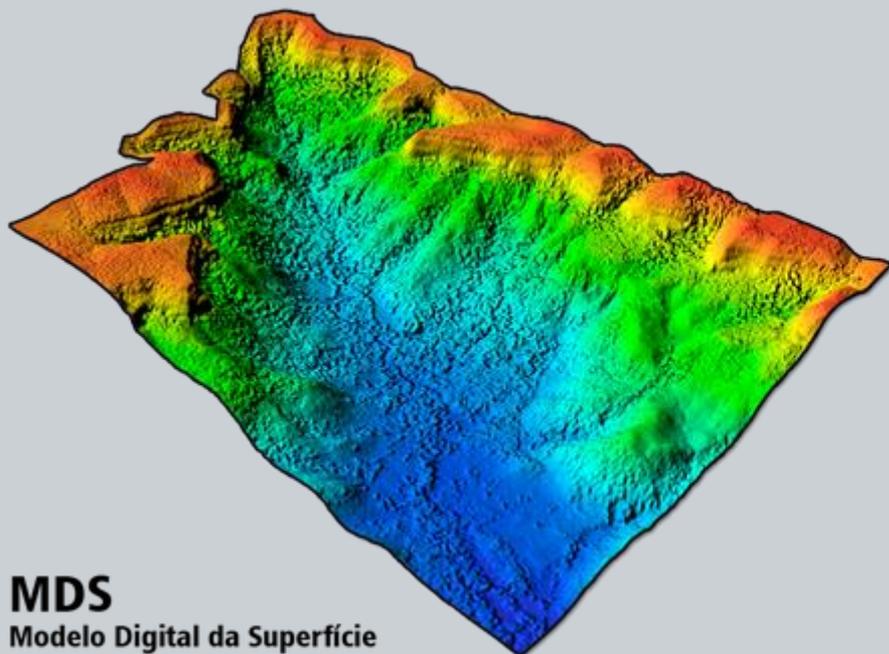
- Densificação dos pontos de controle;
- Amarração geodésica (X, Y e Z).



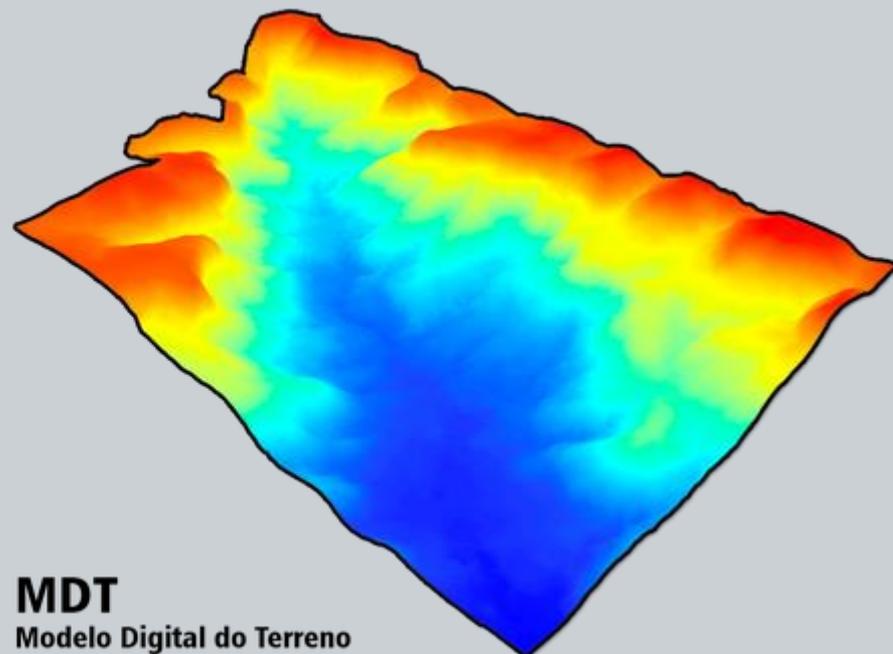
Restituição aerofotogramétrica







MDS
Modelo Digital da Superfície

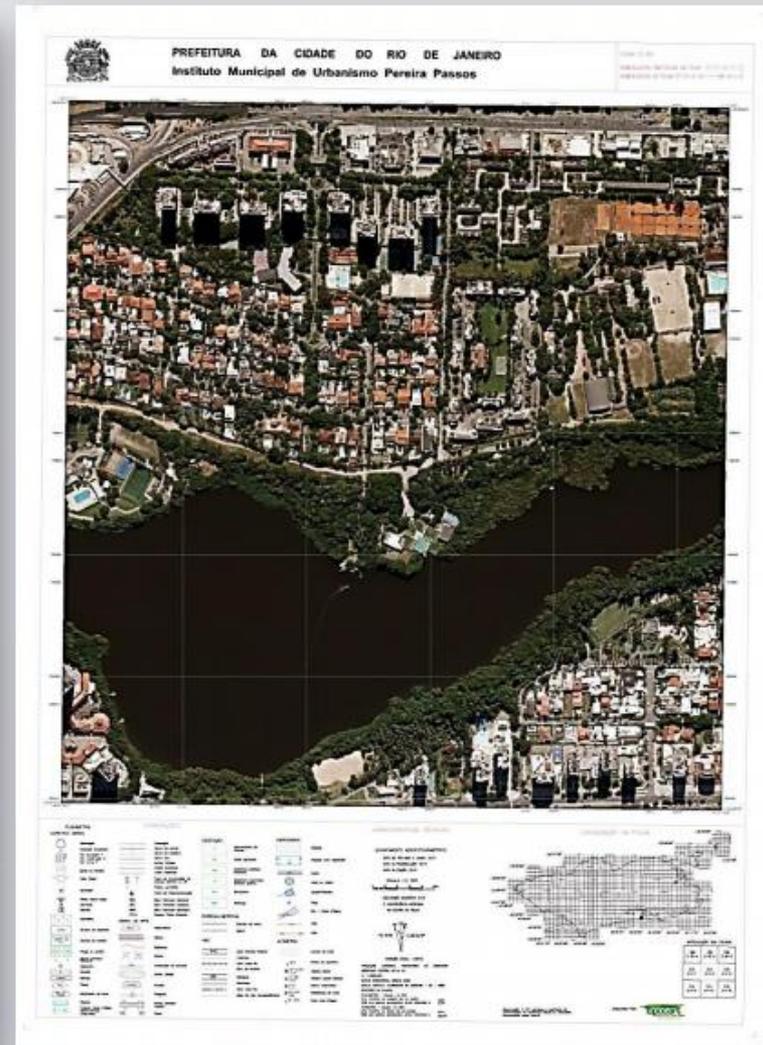
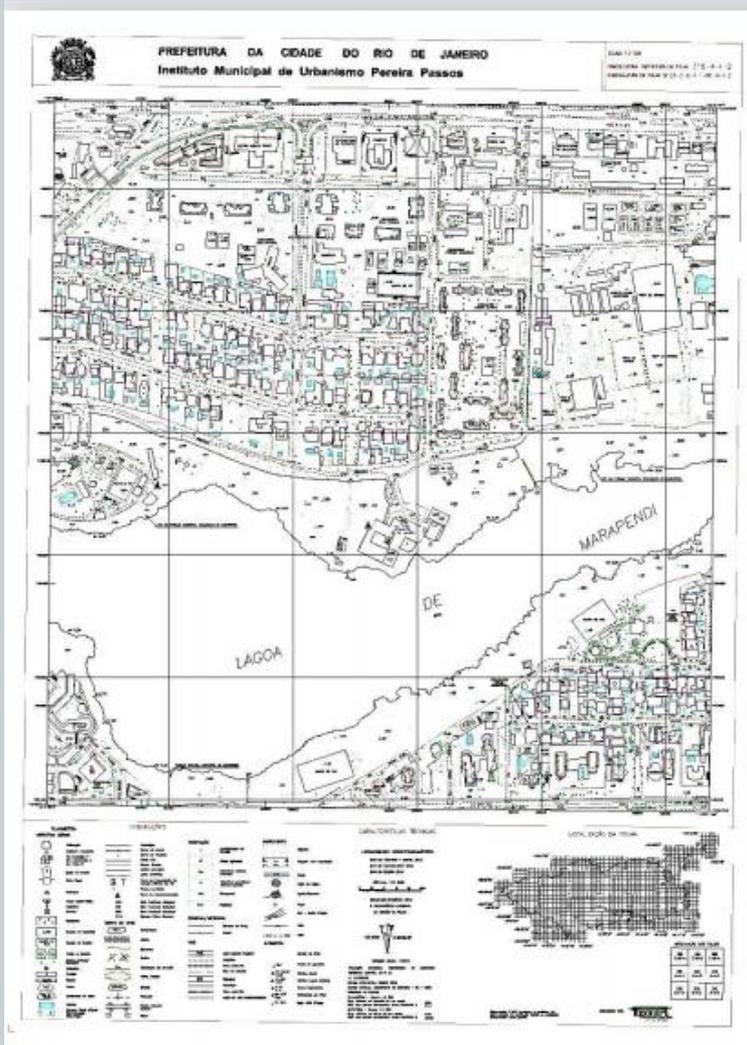


MDT
Modelo Digital do Terreno

Níveis de restituição

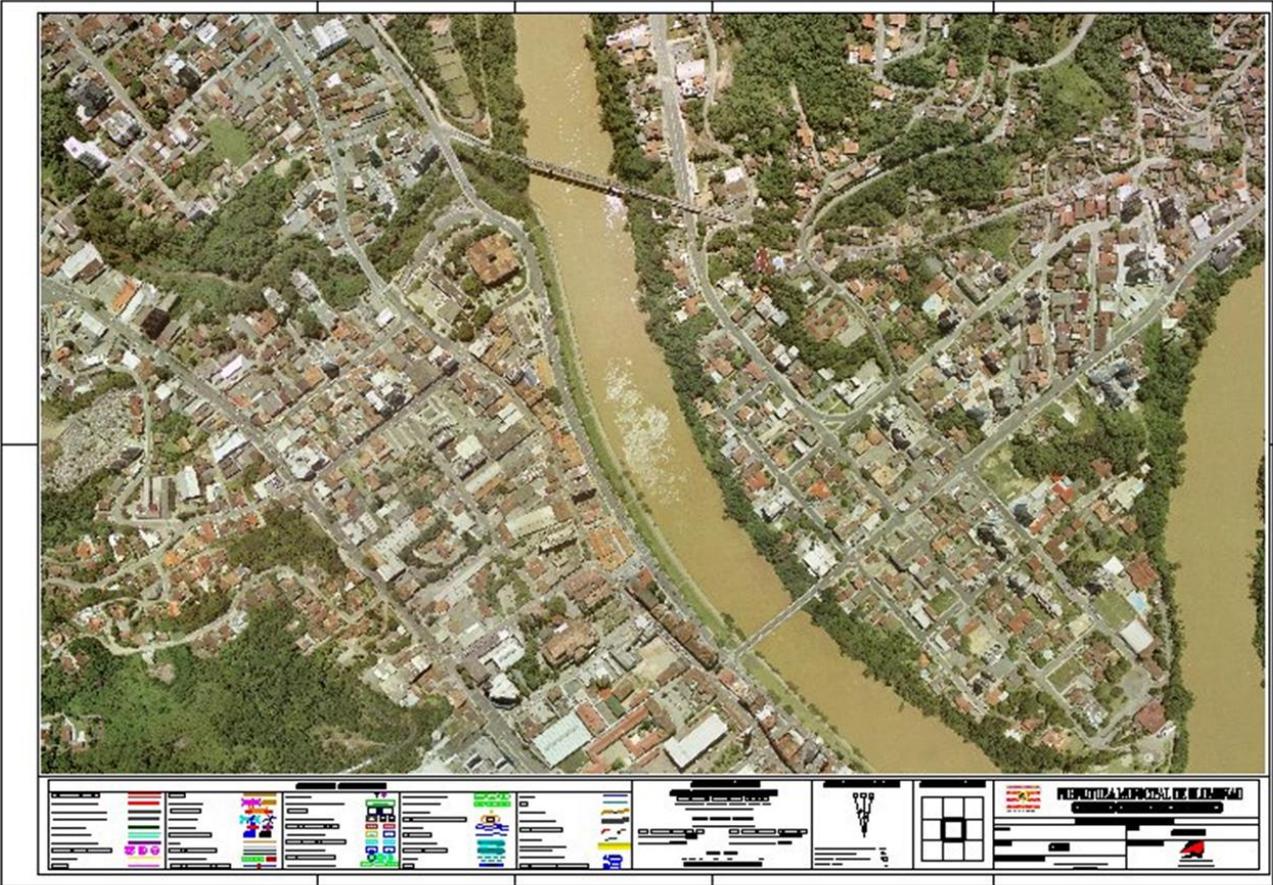


Restituição aerofotogramétrica

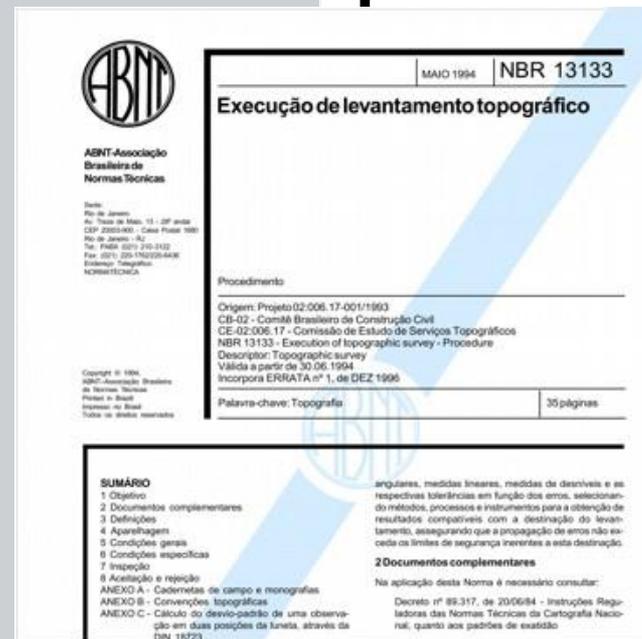
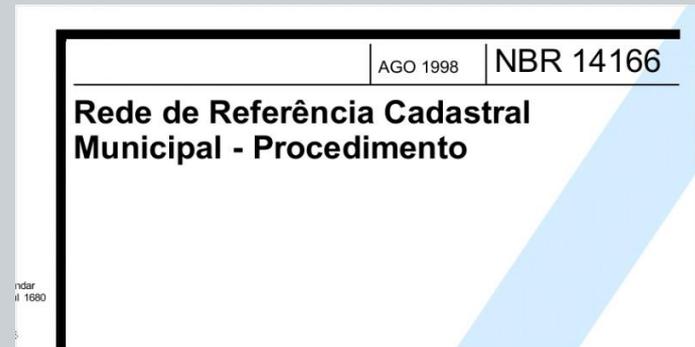
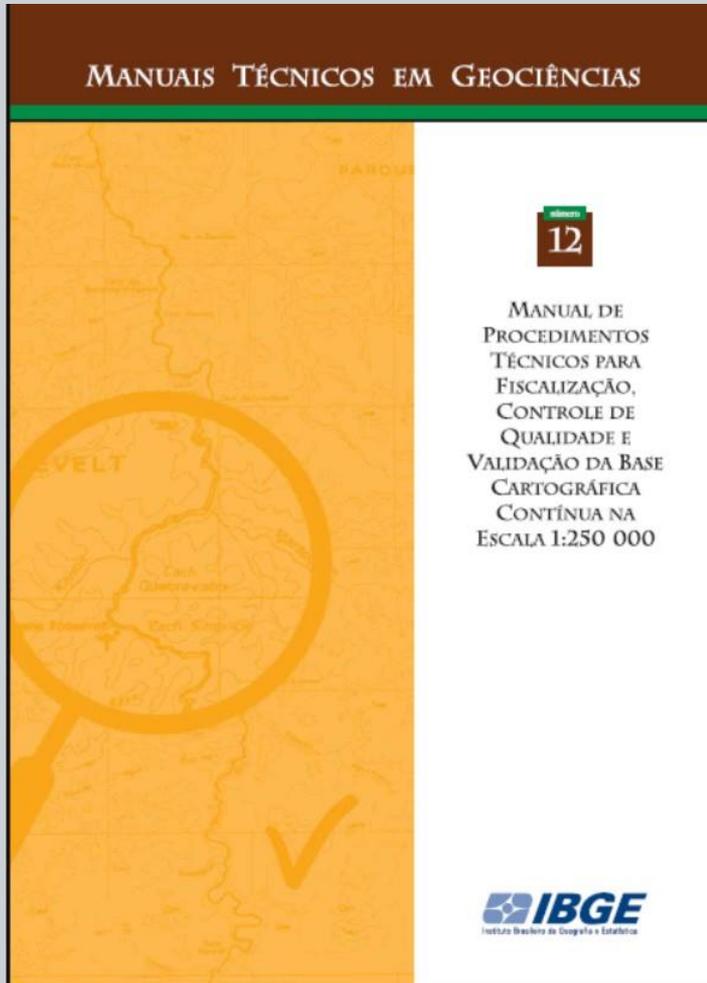


Ortofoto

ORTOFOTOCARTA



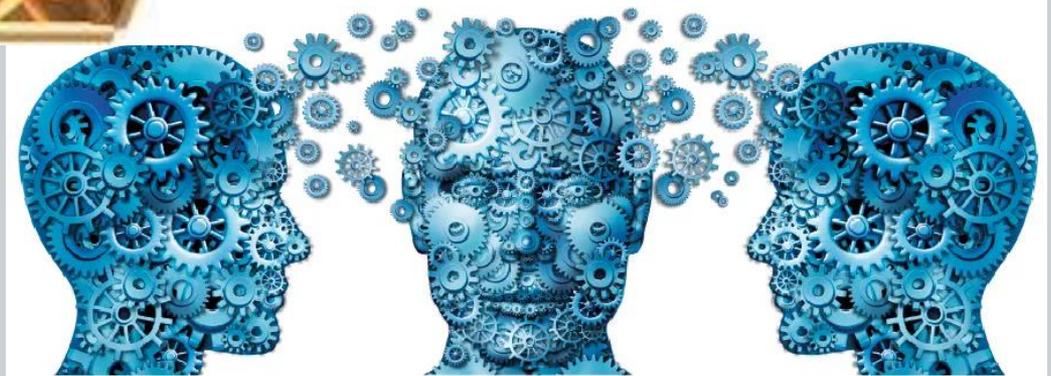
Controle de Qualidade



ção Civil
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Referência Cadastral 23 páginas

Transferência de conhecimento



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