

高效精确

水下3D 建模 解决方案

使水下勘测更为优化

水下三维摄影测量 系统



我们为您提供

3D 建模解决方案

减少您的水下资产勘测成本



- ④ 三维摄影测量
- ④ 高精度成像，无需导航辅助
- ④ 实时三维建模
- ④ 最大化集成度
- ④ 缩短作业时间

公司介绍

IVM TECHNOLOGIES

成立于2020年，专注于水下三维摄影测量解决方案

前身为  **comex** 研发部

拥有15名工业专家和研发精英组成的团队，不断推动水下技术的前沿创新。

IVM 涉足领域及服务

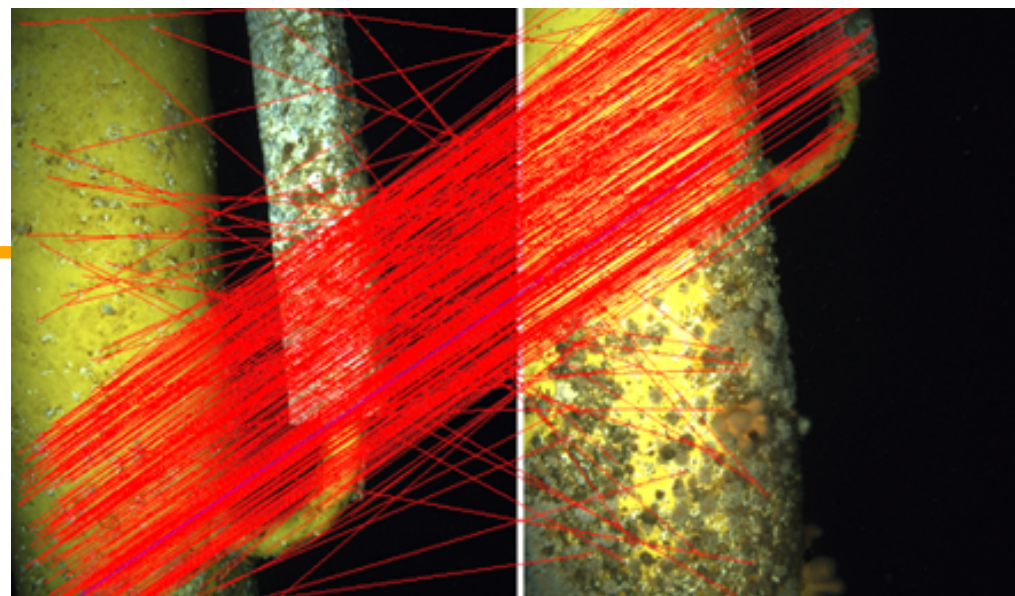
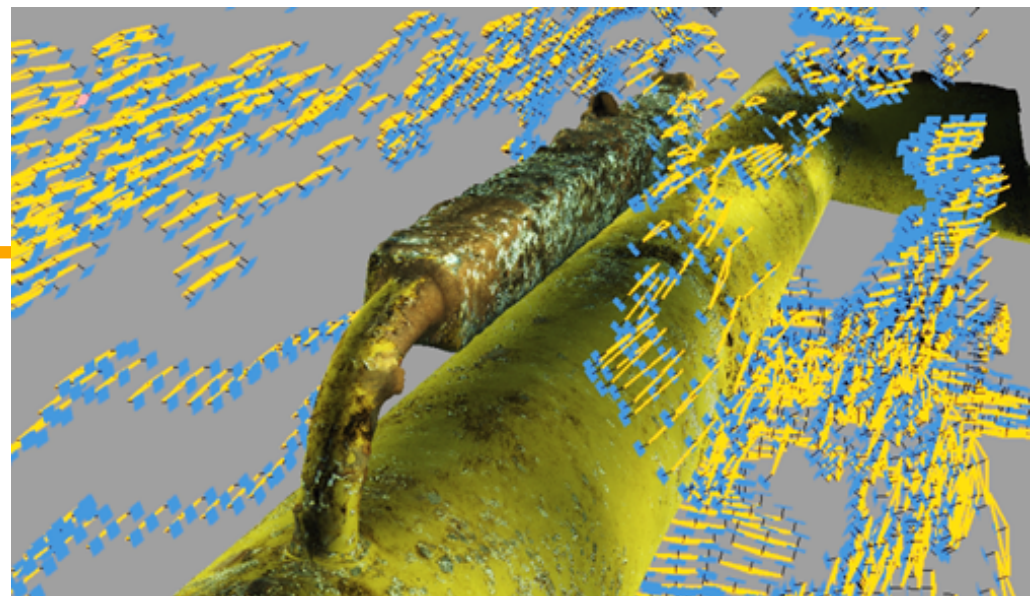
多个工业领域:石油和天然气，海上风电，民用工程，水坝，科考，核能，国防

服务:培训，咨询，演示

IVM 的客户

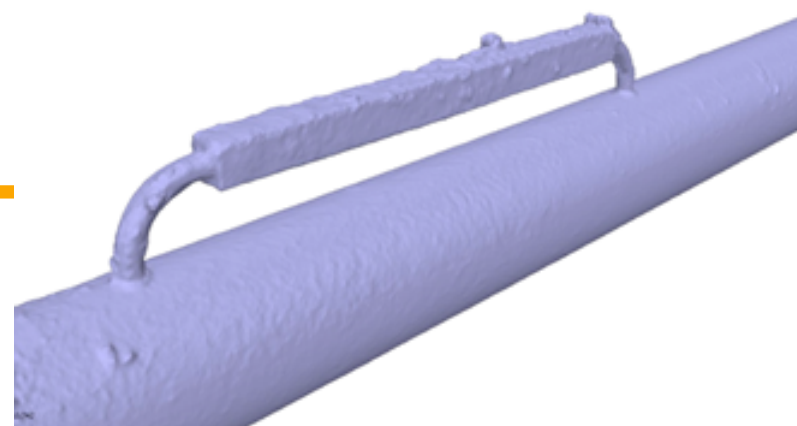


摄影测量法



1 - 拍照
多角度对实物进行拍照

2 - 匹配
将图片共同点进行匹配



3 - 通过关键点形成稀疏云

4 - 密集点云

5 - 网格模型

6 - 纹理生成

测量公差

1: 5000

1: 9000


BUREAU VERITAS
MARINE & OFFSHORE DIVISION
STATEMENT
DV-DT04-50516-0 Rev.0

COMEX ORUS 3D® SUBSEA SURVEY SYSTEM ACCURACY QUALIFICATION FOR MOORING CHAIN INSPECTION

Document(s) and Test result(s):

- The Mooring Chain Dimensional Control Comparison Report (Ref./1/) presents the results from the survey performed with COMEX ORUS 3D® system and their deviation from the reference values obtained by calibrated vernier calliper according to BUREAU VERITAS NR-493-DT-R03-E;
- The tests conducted by COMEX allowed to demonstrate ORUS 3D® ability to deliver mooring chain inspections with a millimetre accuracy. Results are presented in the table below:

ORUS 3D recorded accuracy on mooring chain inspections	0.36 mm
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Conclusion(s) and way forwarded:

Considering COMEX ORUS 3D® system characteristics, the provided documentation, the methodology used over the whole qualification process, the performance of appropriate testing and the obtained results, BUREAU VERITAS MARINE & OFFSHORE DIVISION certifies that COMEX ORUS 3D® system is fit for mooring chain inspections as per NR-493-DT-R03-E.

To whom it may concern

Paris, April 15th, 2019, Rev.0


Catalin TODERAN
Manager SP&S & Drilling Development


Jorge RAMIREZ PENAYO
Senior Subsea Engineer



This certificate is delivered within the scope of the BUREAU VERITAS General Conditions of Service.

2019

必维国际检验集团认证


BUREAU VERITAS
MARINE & OFFSHORE DIVISION
STATEMENT
DV-DT04-50516-0 Rev.0

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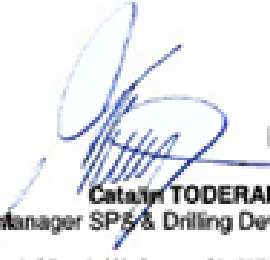
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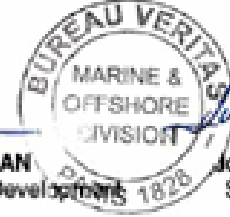
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2023

必维国际检验集团认证 (进行中)

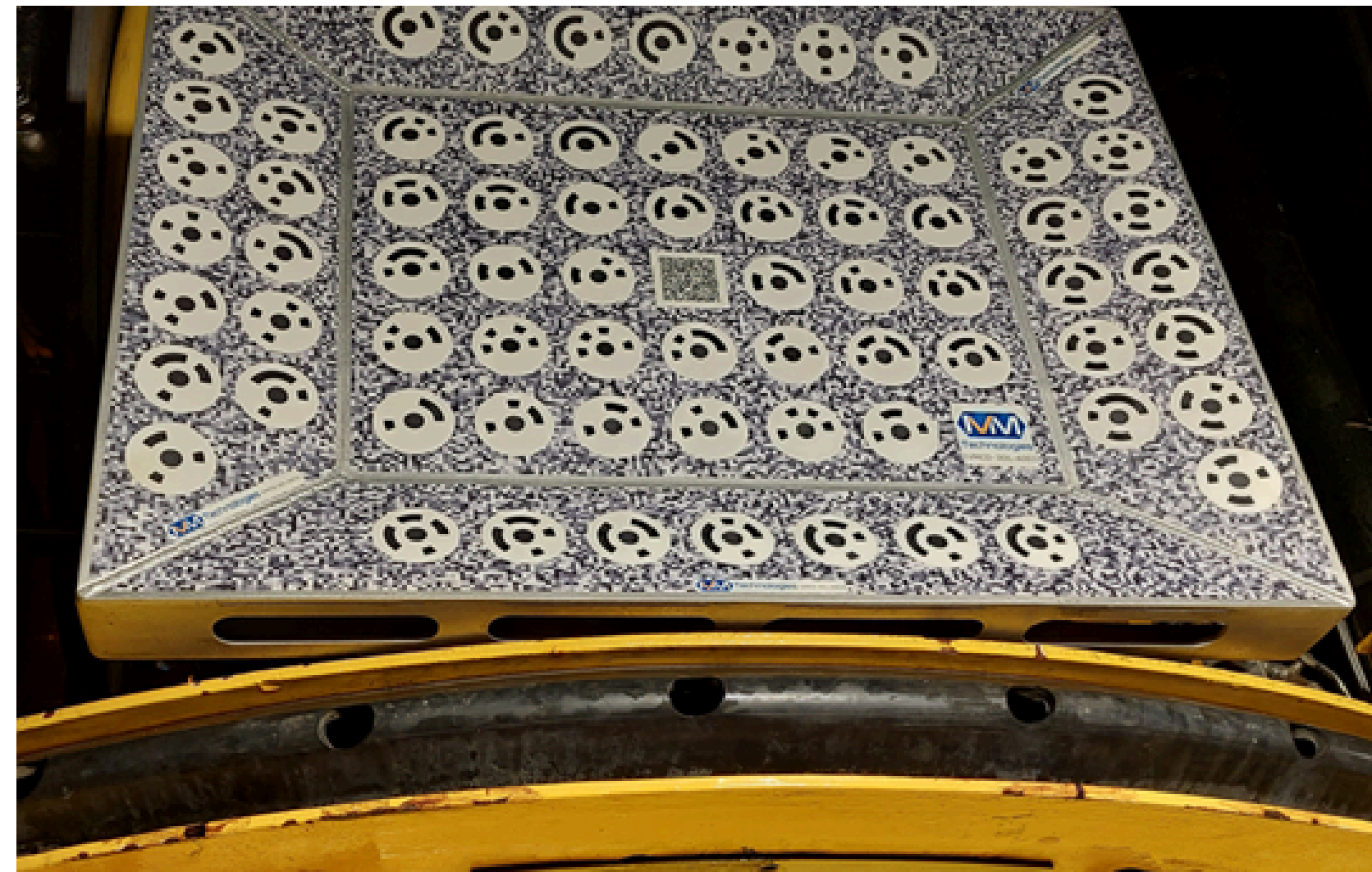
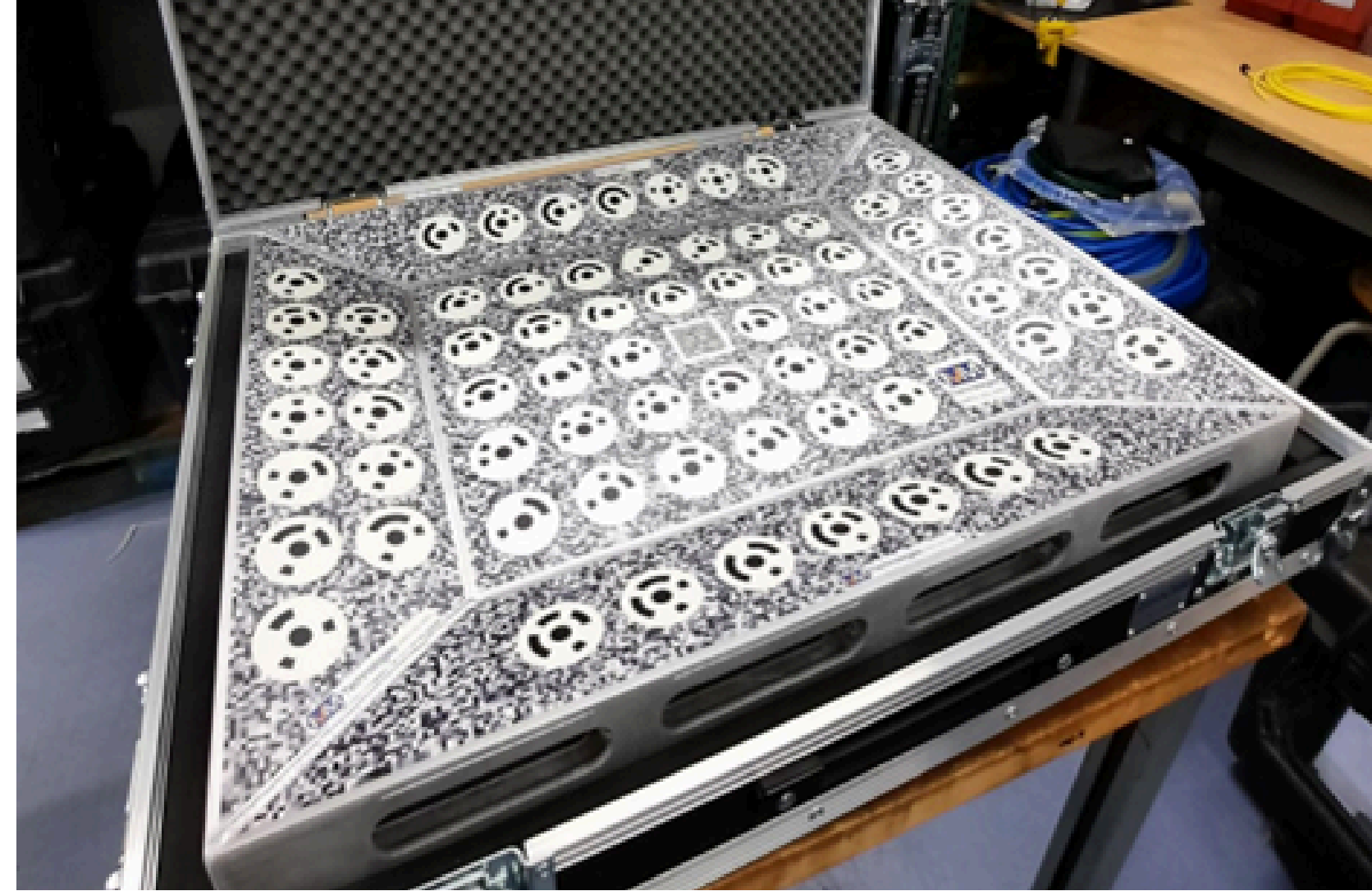
校准系统：

在每个新的测量条件下，校准与精度评估通过预校准设备与同一设备在现场采集的3D结果进行比较而实现。

这种方法能够非常精确地确定相机的相对位置和角度。诸多对信息采集有影响的因素都会被考虑进去，如光学中心、折射以及基于温度的系统效应补偿等。

使用这种校准方法无需放置标尺，也能获得非常精确的尺寸。

节约作业时间，随测随走



我们的产品

IVM 系列



HYDRO 100

浅水



HYDRO 300

浅水



HYDRO 1000

深水



HYDRO 3000

深水

IVM SLAM

- ▶ 实时3D建模
- ▶ 提供作业支持
- ▶ 支持所有 HYDRO 系列
表面装置安装

实时 建模



配件

倾斜装置

高性能后期处理器

变流器

110AC - 48DC
370DC / 48DC
及更多...



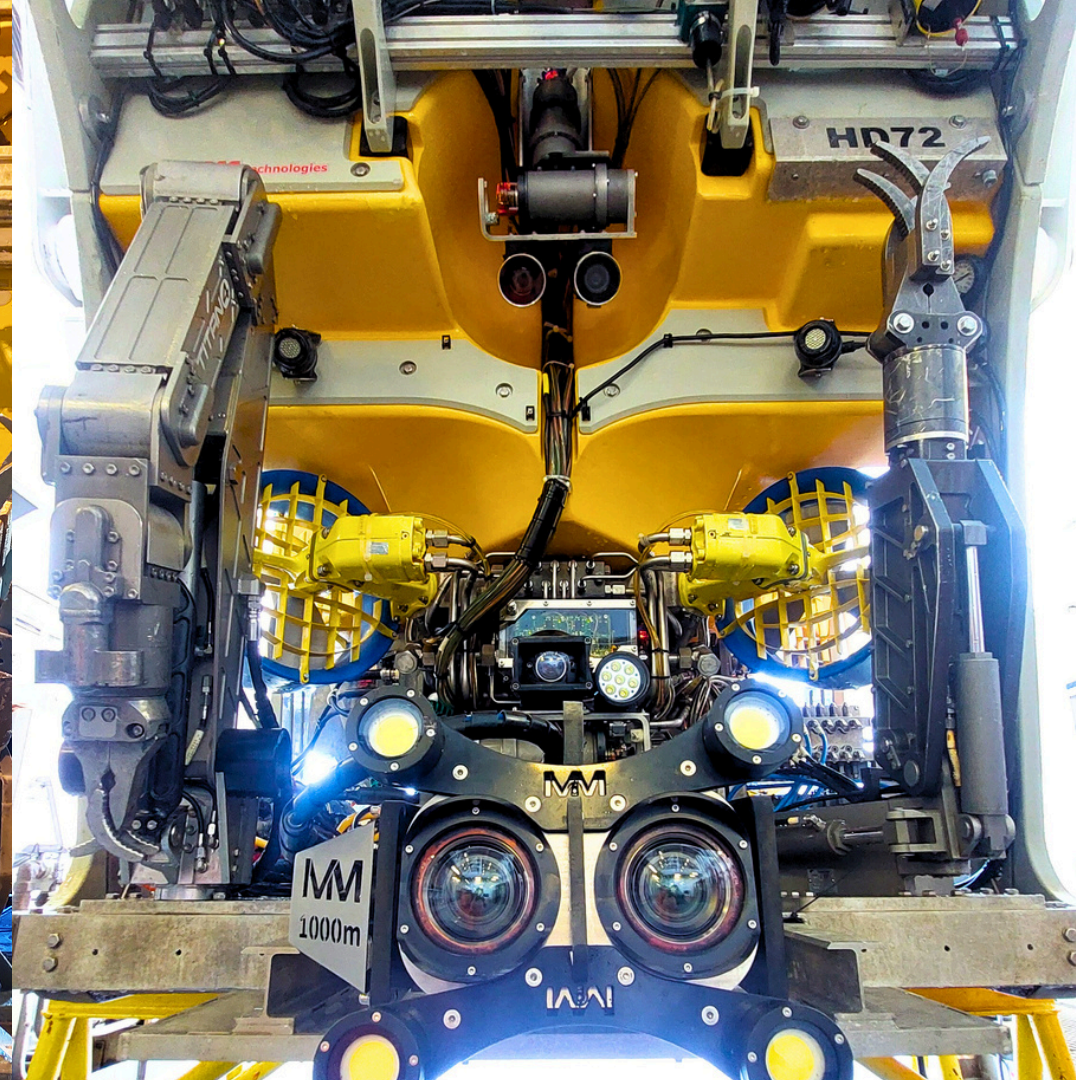
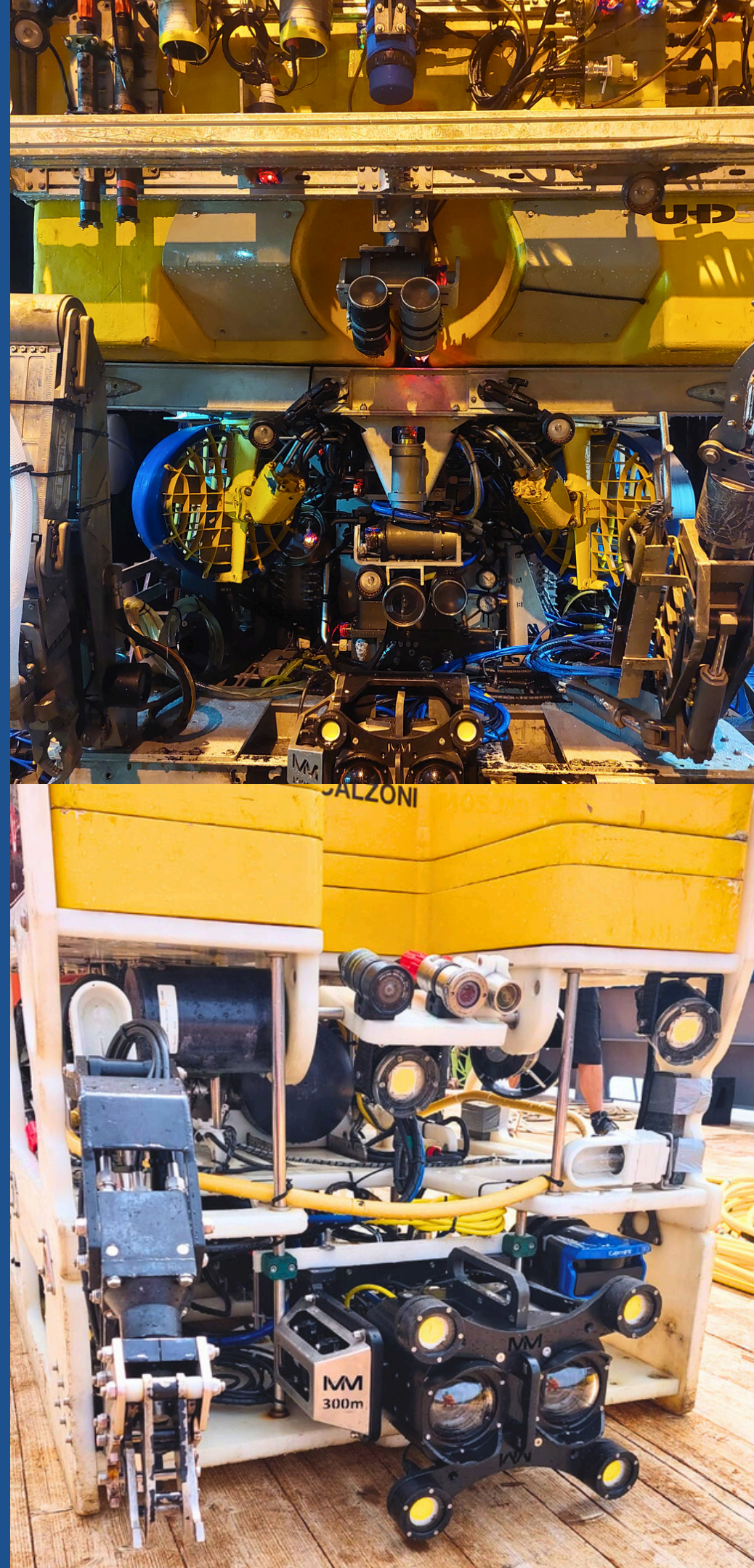
最大化 集成度

► 观测级别



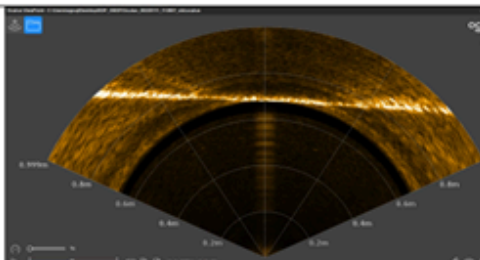
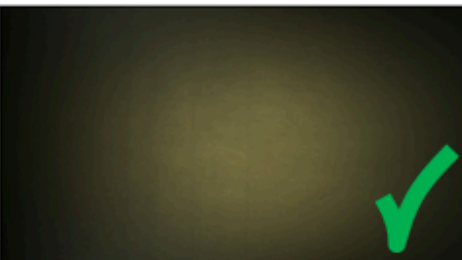
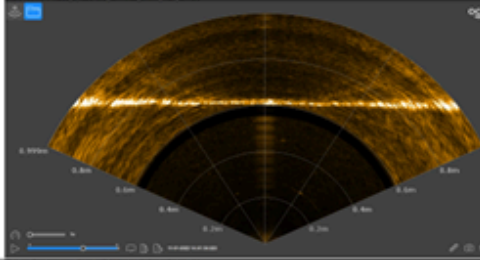
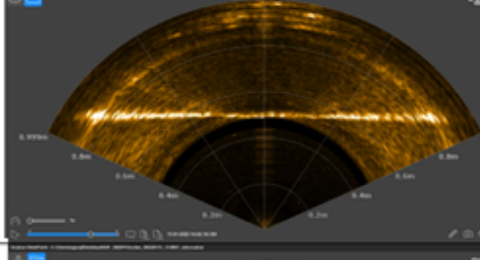
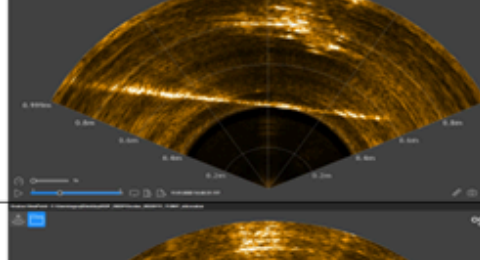
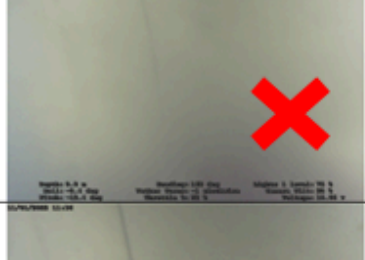
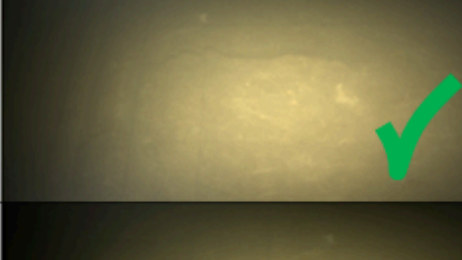
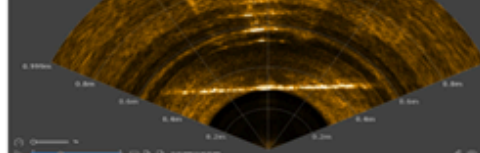
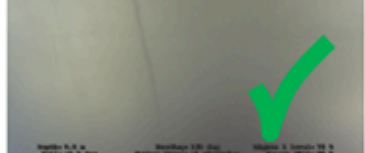
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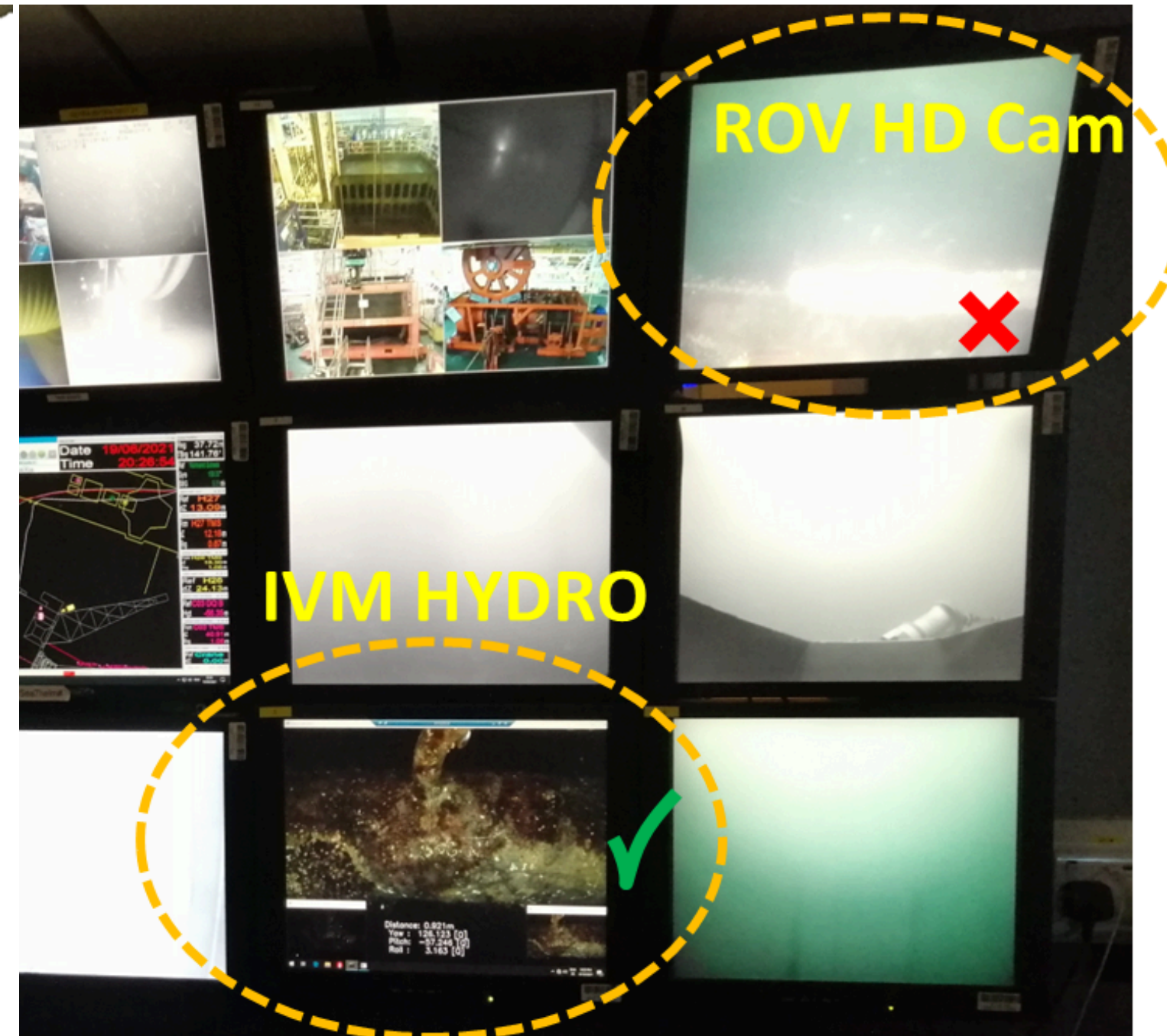
- ▶ 作业级别 – 轻型
- ▶ 作业级别 – 搭配倾斜装置



浑浊水域能见度对比

成像效果优于ROV高清摄像头

Distance (cm)	Accoustic	ROV HD cam	HYDRO 300
70 cm			
60			
50			
40			
30 cm			



为什么选择我们？

立体摄影测量法？

快速勘测

- 大大节省作业时间
- 无需导航辅助 / 标尺

真实感渲染

- 纹理逼真(污垢、材质、损坏等)

为什么选择我们？

IVM TECHNOLOGIES ?

最高精确度

- 更高的勘测附加值

IVM SLAM

- 高效的实时3D勘测

高集成度

- 适用于所有ROV

灯光嵌入

- 低能见度作业