

FUNDING PROGRAM FOR NEXT GENERATION WORLD-LEADING RESEARCHERS

Project Title: Development of real-time 3D scanning system for both inside and outside of human body

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1. Background of research

Detailed observation is necessary to reveal the secret function of human body. Although there are a lot of techniques exist, such as diagnostic radiography and MRI, 3D information of human body is now attracting many people. For example, if you can retrieve accurate and dense 3D shape of muscle and subcutaneous fat or small bumps of the gastrointestinal inner wall, it would be important materials for medical diagnosis.

2. Research objectives

This research is for developing techniques for measuring 3D information of both inside and outside of live human body, such as (1) super-high-speed measurement to observe minute change of human body surface, (2) ultra-small scanner for endoscope to scan inside the human body, and (3) 3D data and motion capture technique with transmission system for remote surgery.

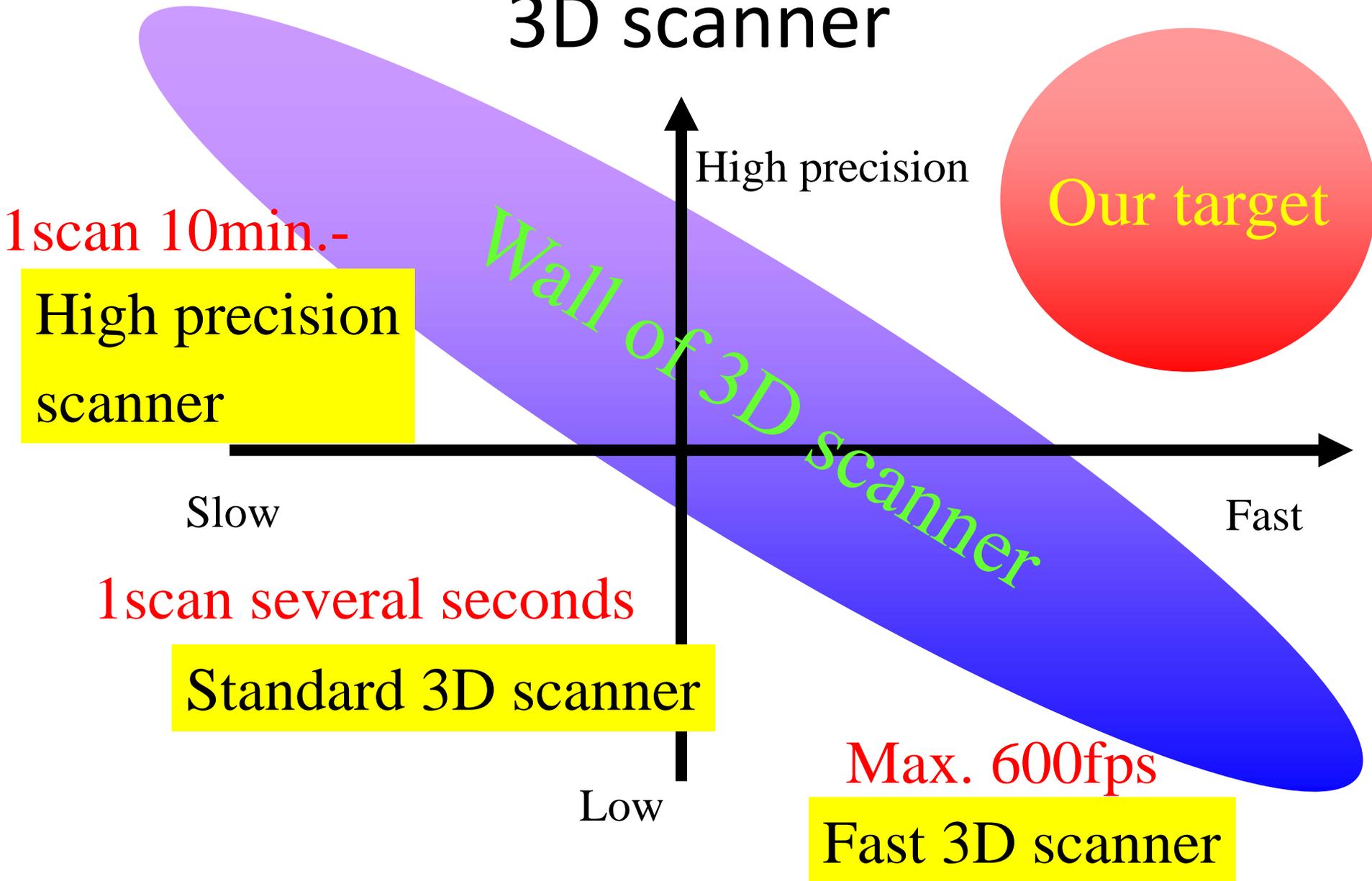
3. Research characteristics (incl. originality and creativity)

Past 3D measurement technique was unable to measure the moving object accurately. Although intensive researches are conducted to capture the data, no practical solution has been proposed yet. Since our technique is specialized for moving object, awarded several times and patented, there is high possibility to solve the problem to achieve high precision and fast human body scanning.

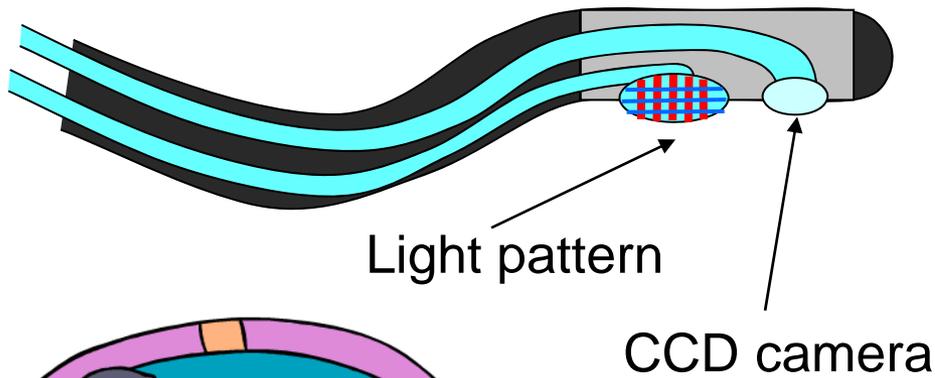
4. Anticipated effects and future applications of research

It is expected that super-high-speed human body shape measurement can reveal new life function, such as automatic facial expression recognition and ultra-small scanner for endoscope will contribute to highly reliable diagnosis on gastrointestinal sickness. Further, 3D scanning of live person can be used for remote surgery and remote diagnosis.

Precision and scanning speed of 3D scanner



Endoscope 3D scanner



Remote surgery

