# Technological Trends Driving The Modernization Of Cadastral Systems

**Christine Leslie, Tim Hodson and Lauren Voelker (USA)**

**Key words:** Cadastre; Digital cadastre; Land management; Land readjustment

**SUMMARY**

Many legal descriptions in the USA use the metes-and-bounds system to describe land boundaries. Metes-and-bounds descriptions define parcel boundaries using physical features, references to other parcel corners, and directions and distance measurements.

Parcel boundaries are typically described in a sequence starting from a point-of-beginning and returning to the same point. Straight lines are described using a direction and a distance, while curved lines are described with a direction, radius and another curve parameter such as an arc length, chord length or a delta angle.

Map technicians manually type these measurements, also known as COGO (Coordinate Geometry) dimensions, into software to construct and map parcel boundaries.

While data entry of COGO dimensions has been made efficient and user-friendly over the years, it is still a labor-intensive process that is prone to data entry typos and mistakes.

This paper presents a novel approach utilizing Optical Character Recognition (OCR) technology to extract measurement data from legal deeds and convert it into numerical values. The extracted measurements undergo a review process before being transformed into Coordinate Geometry (COGO) values compatible with the software. This paper details the implementation of this innovative capability and highlights its potential to significantly enhance the productivity of thousands of map technicians across the United States.

---